维京斧头设计:

参考图:

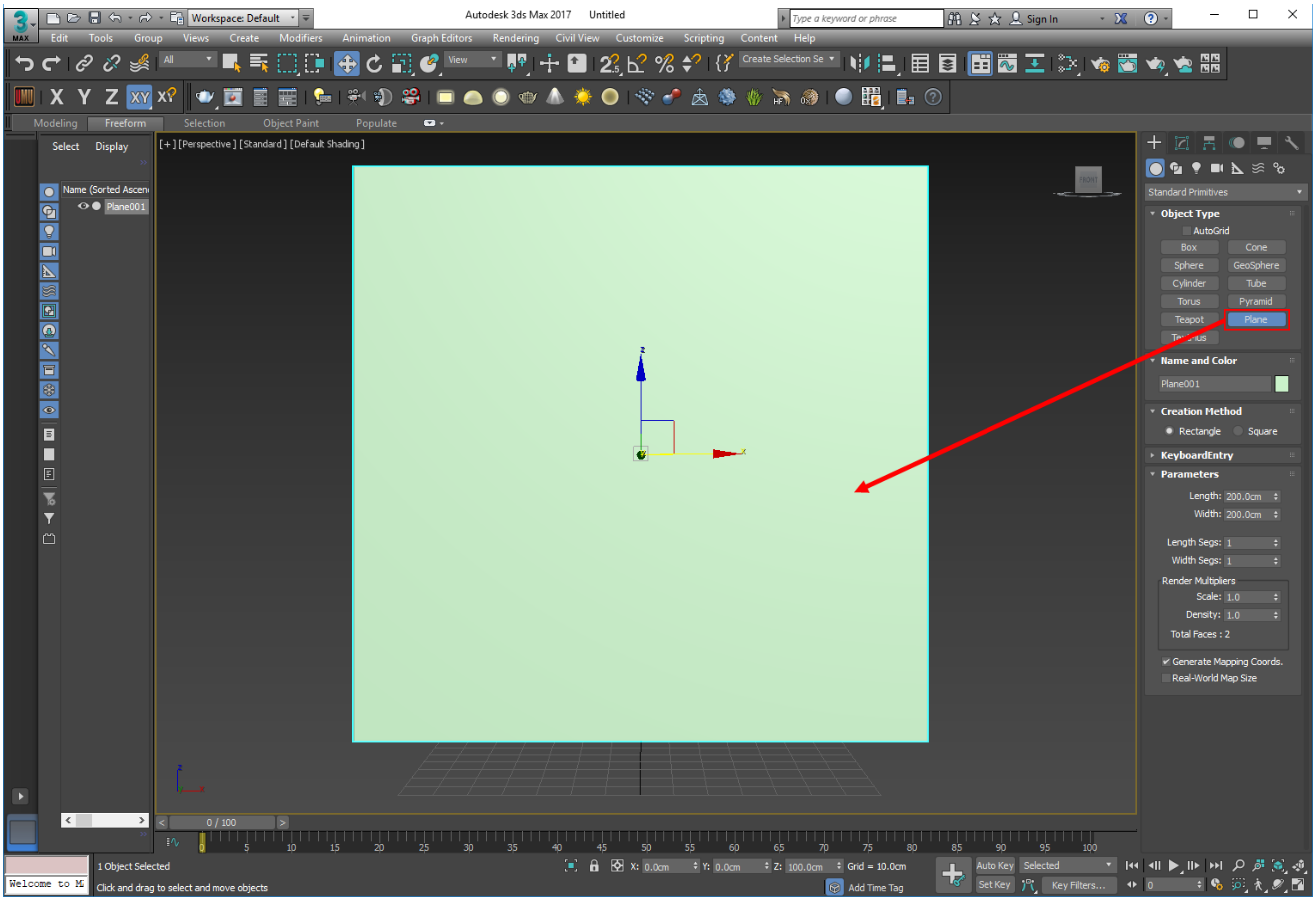
https://www.artstation.com/artwork/rR9zR6

https://skfb.ly/6CZqL

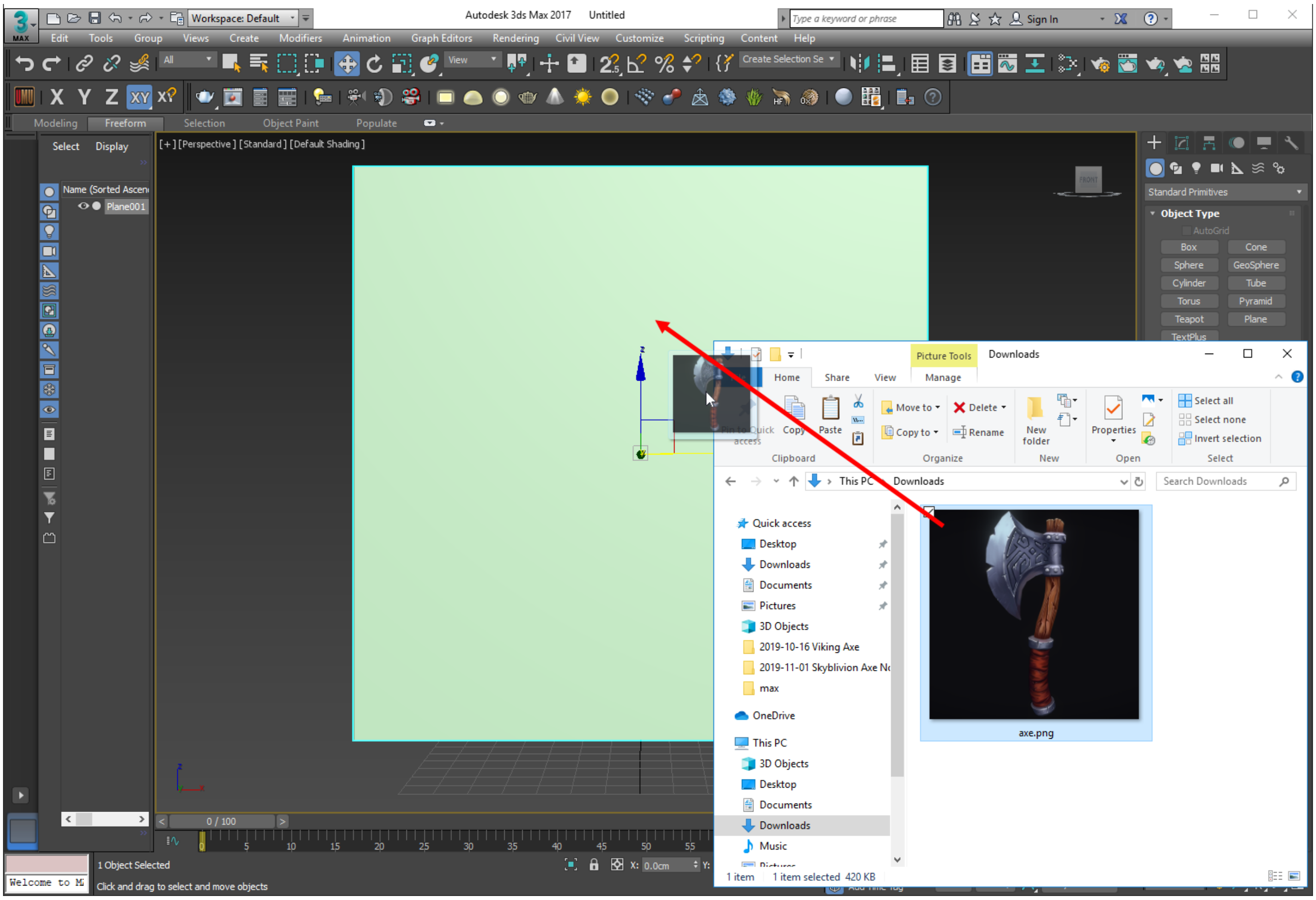
软件:

3ds Max, Zbrush, Substance Painter

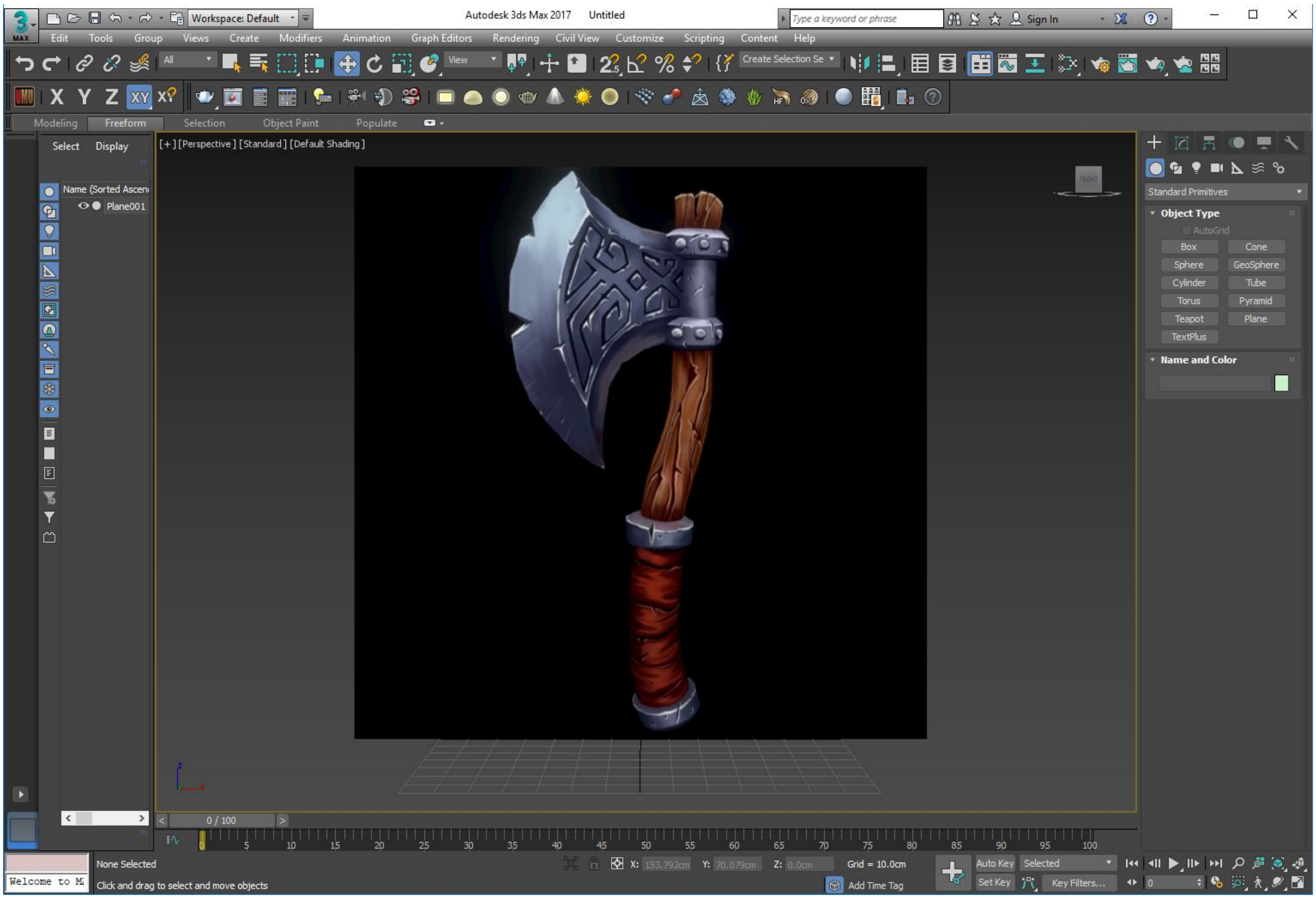
首先，建立一个 Plane, 大小大概 200cm x 200cm



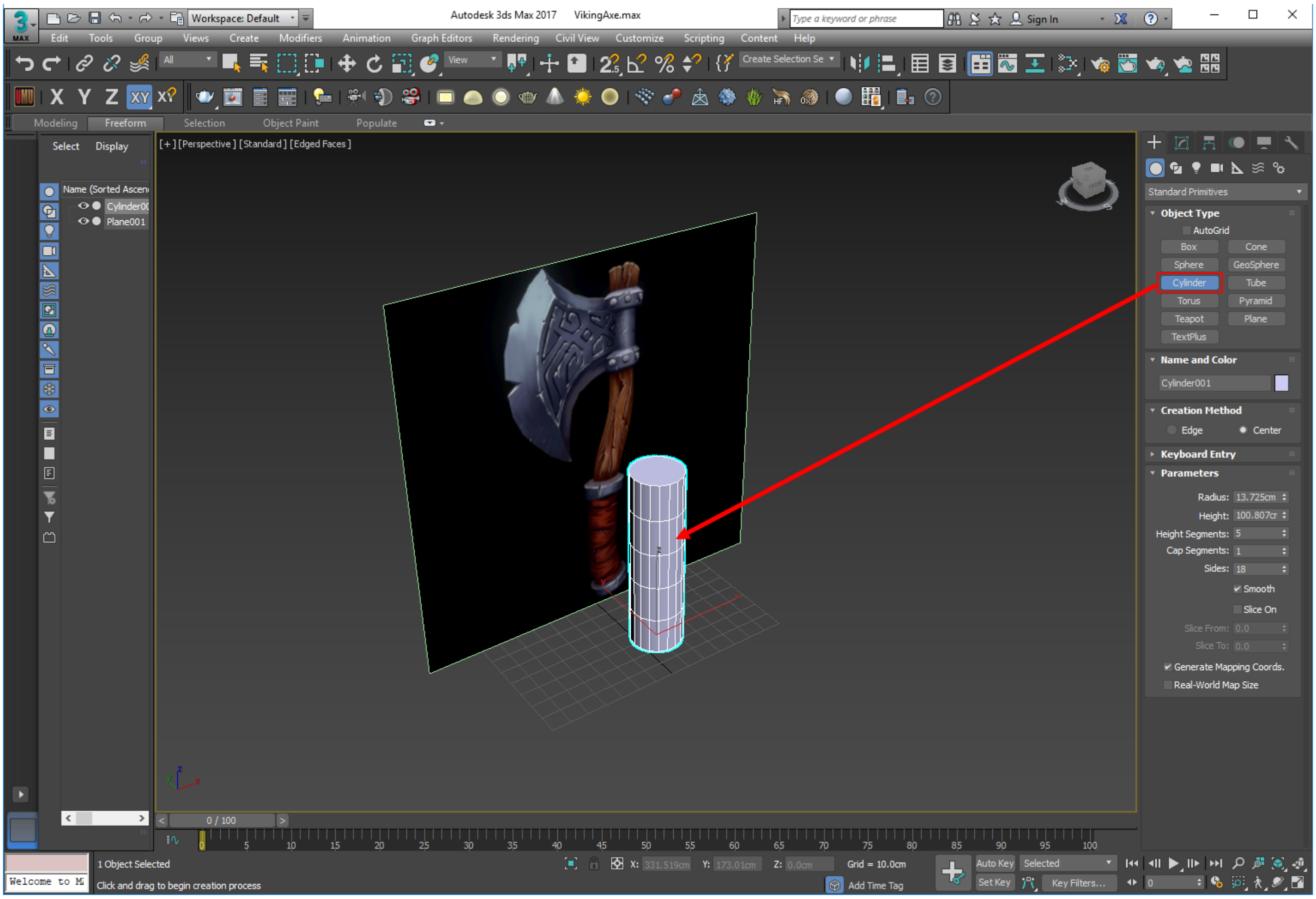
将照片导入到 Plane 里



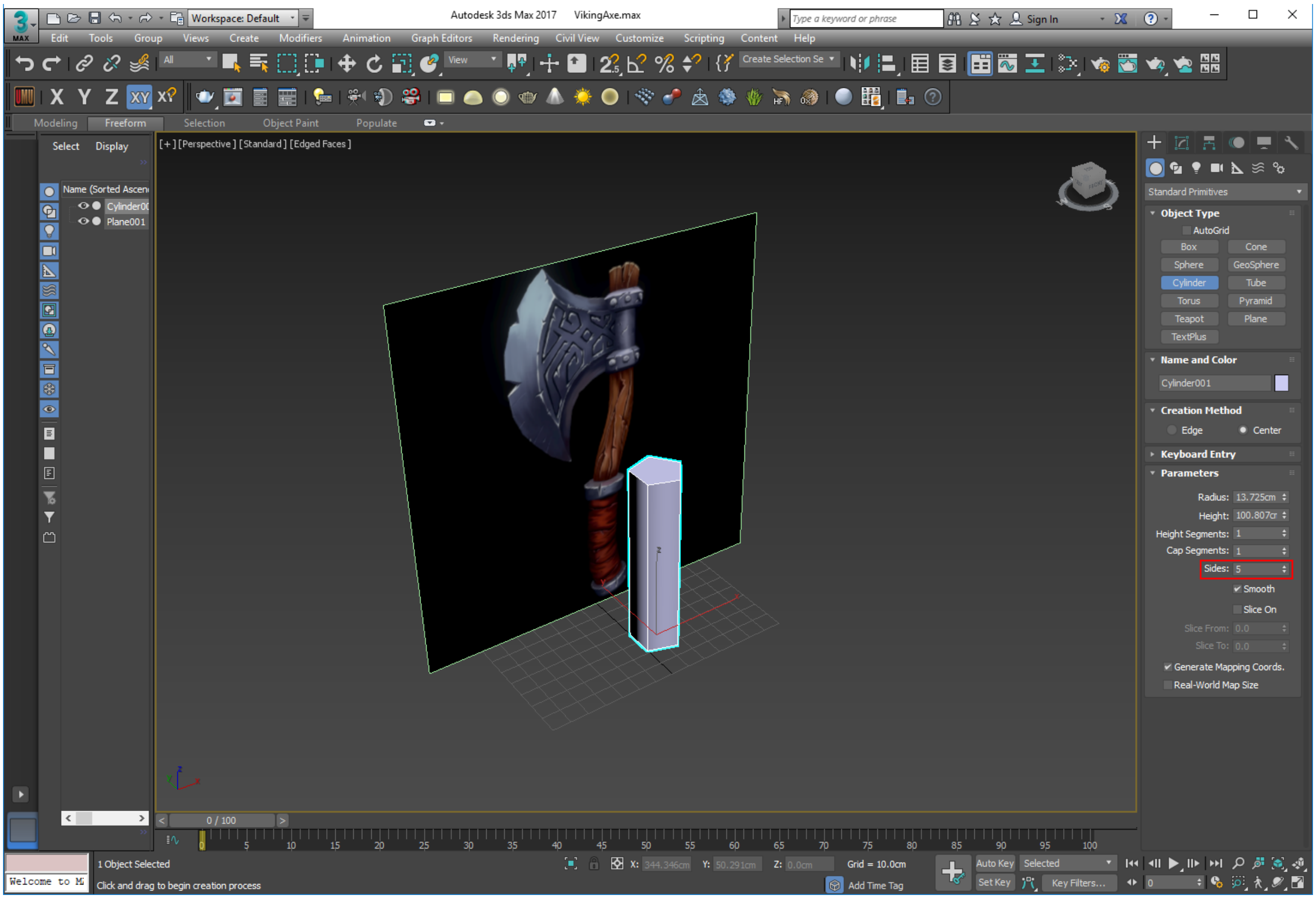
把照片导入 Plane 之后，就可以看到斧头的图片



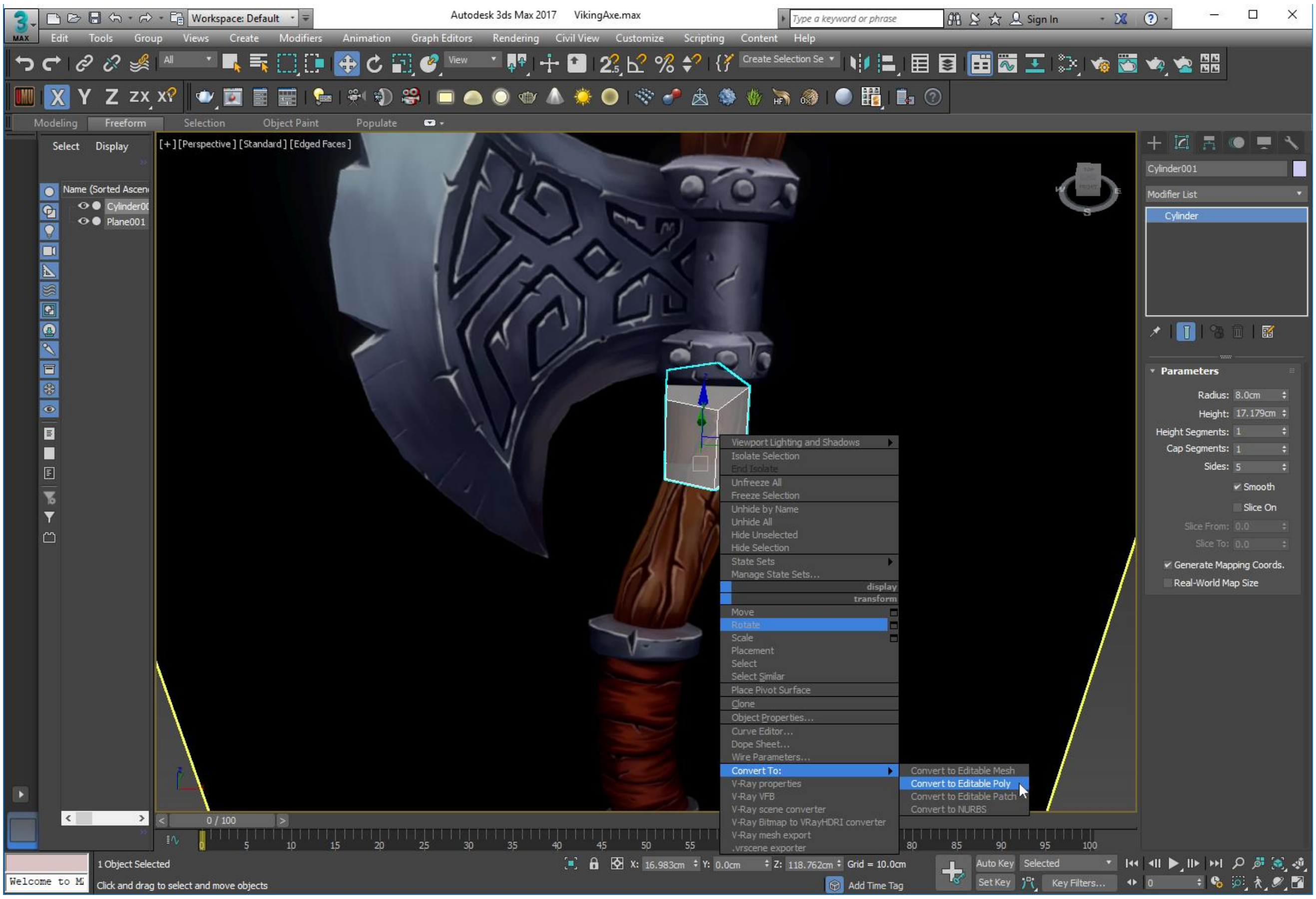
建立一个圆柱体 (cylinder)



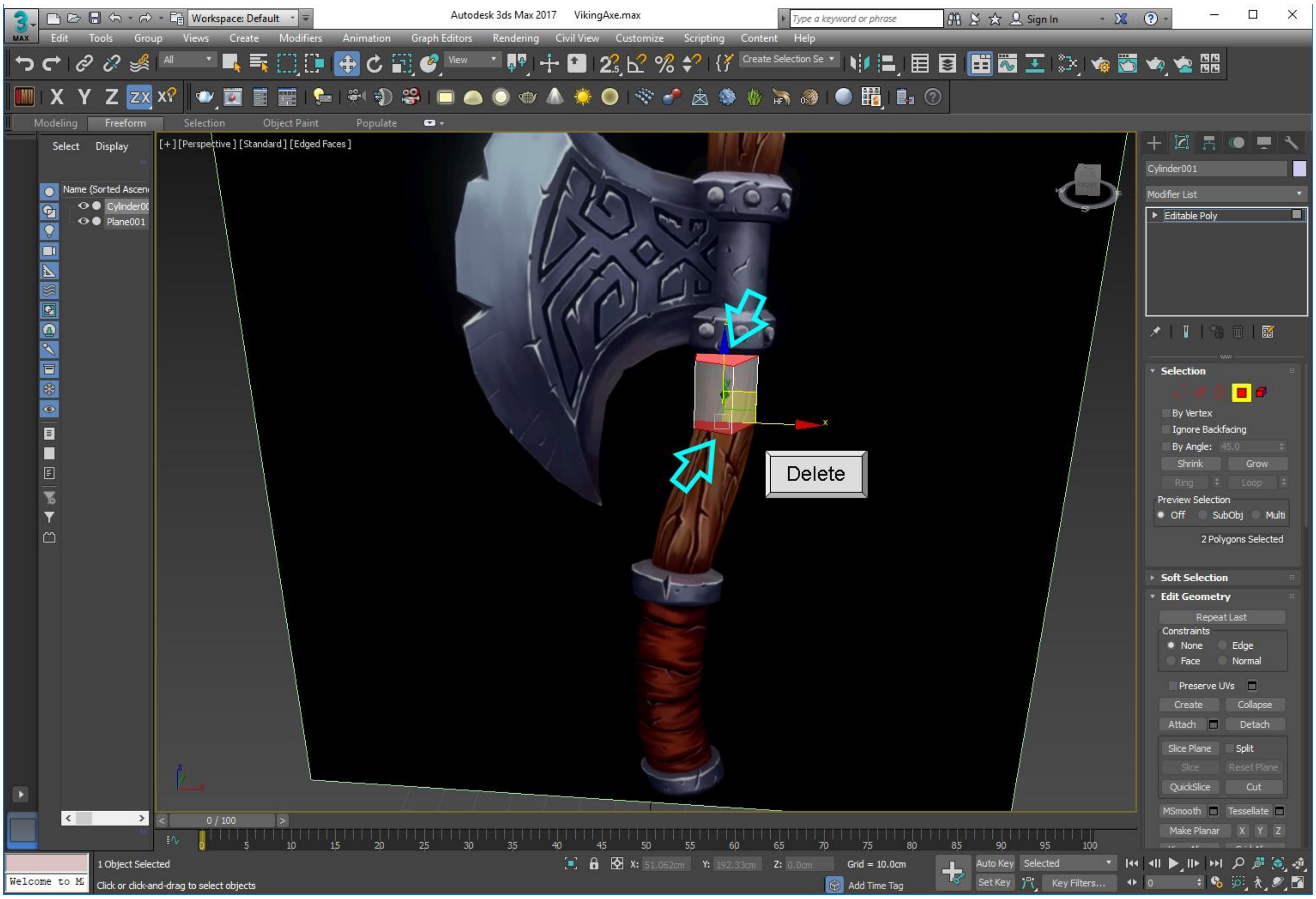
把圆柱体的边改成 5，因为我们要建立低模型斧头



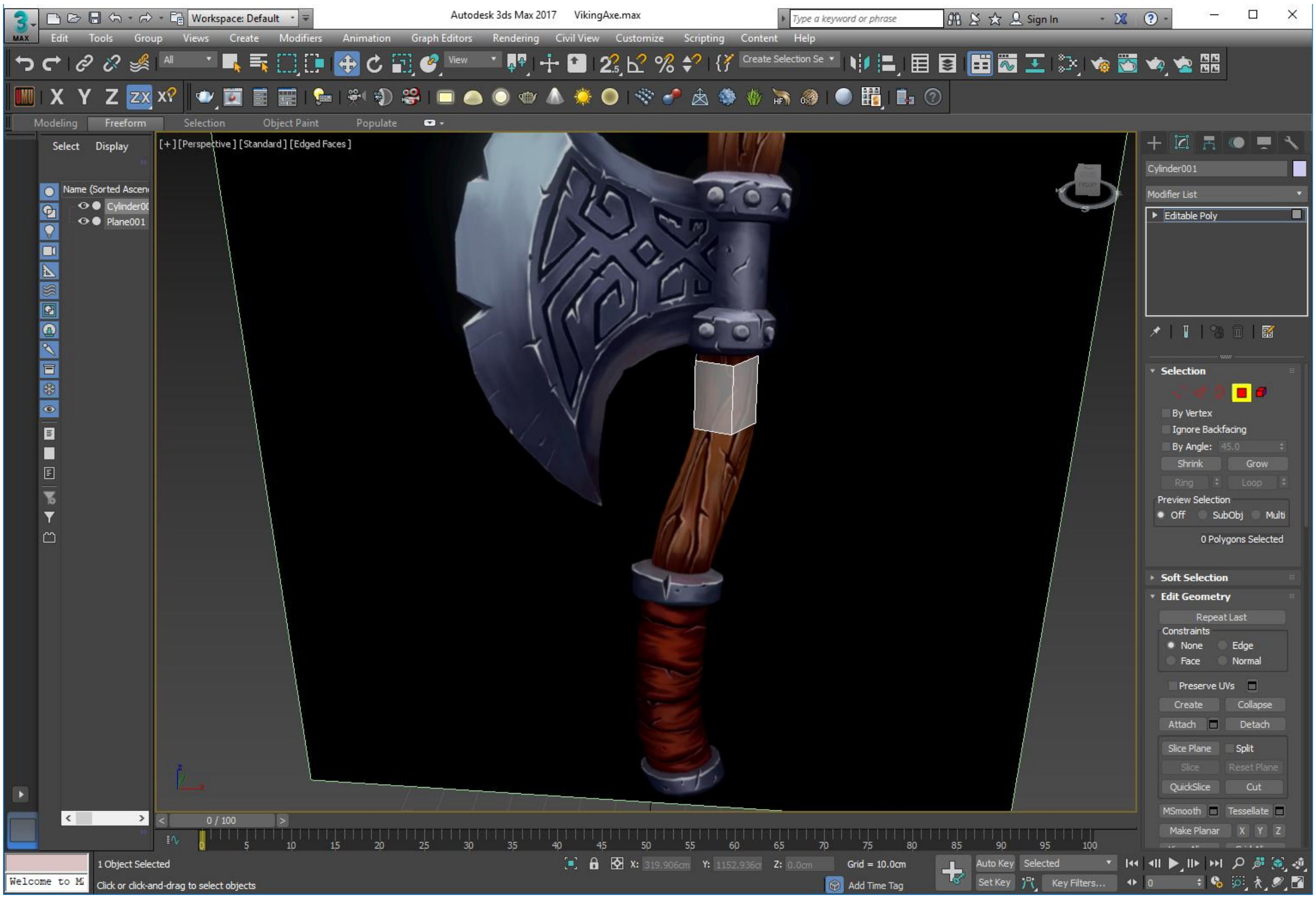
将圆柱体放到中间，滑鼠右键按 convert to editable poly



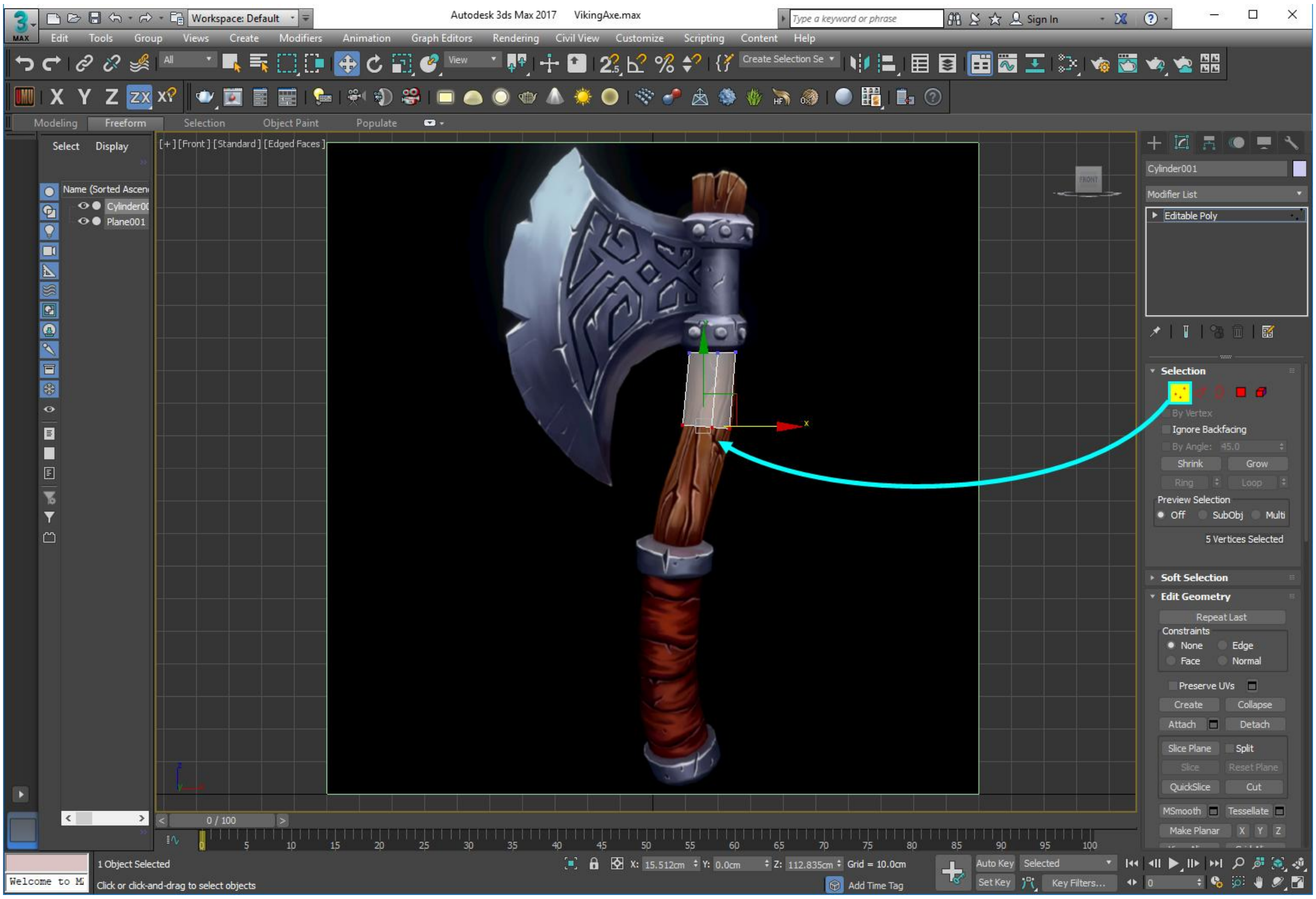
选择上面和下面的表面，然后将它们删除



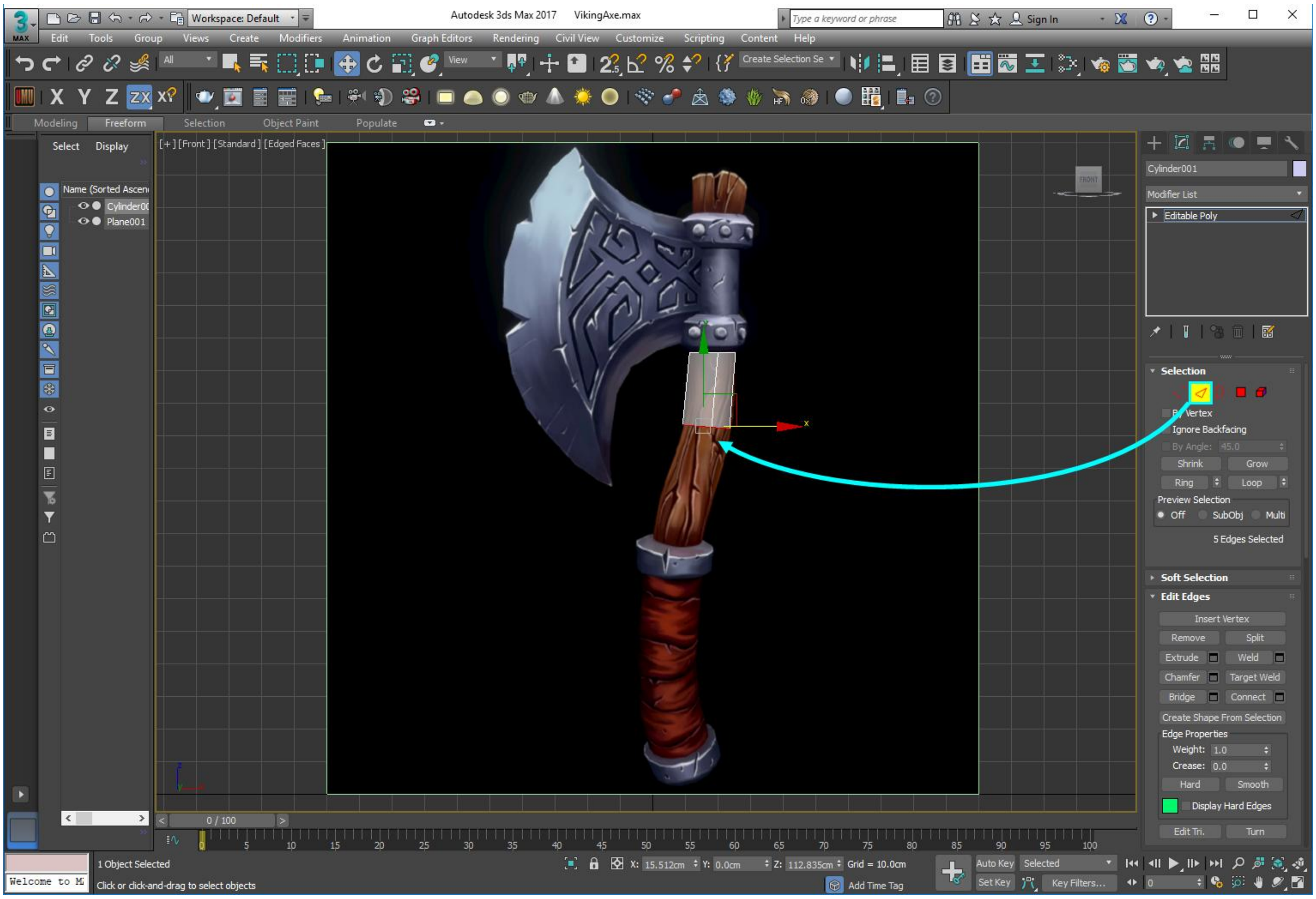
删除了上面的下面的表面了



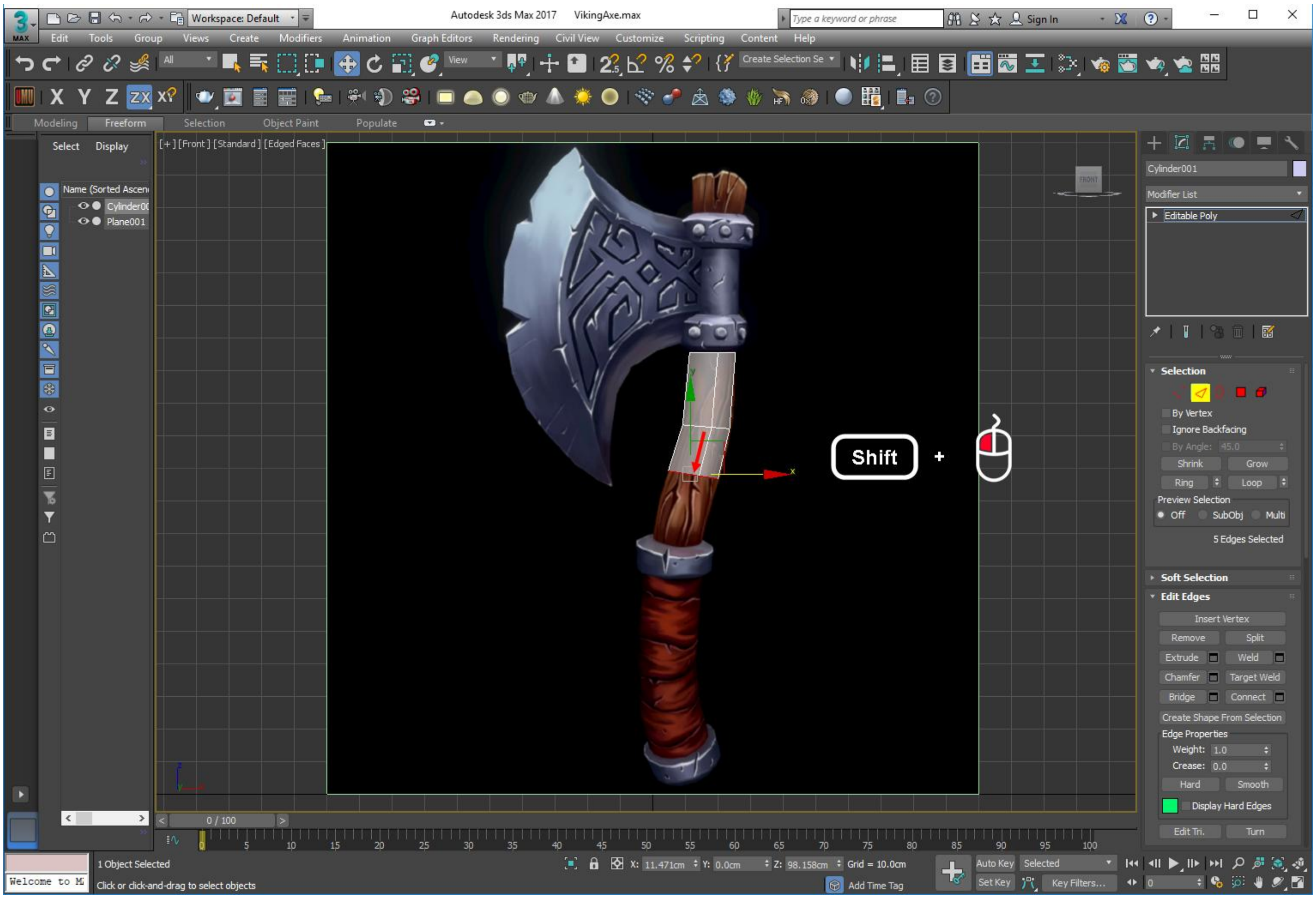
选择点 (Vertex)，然后调整位子

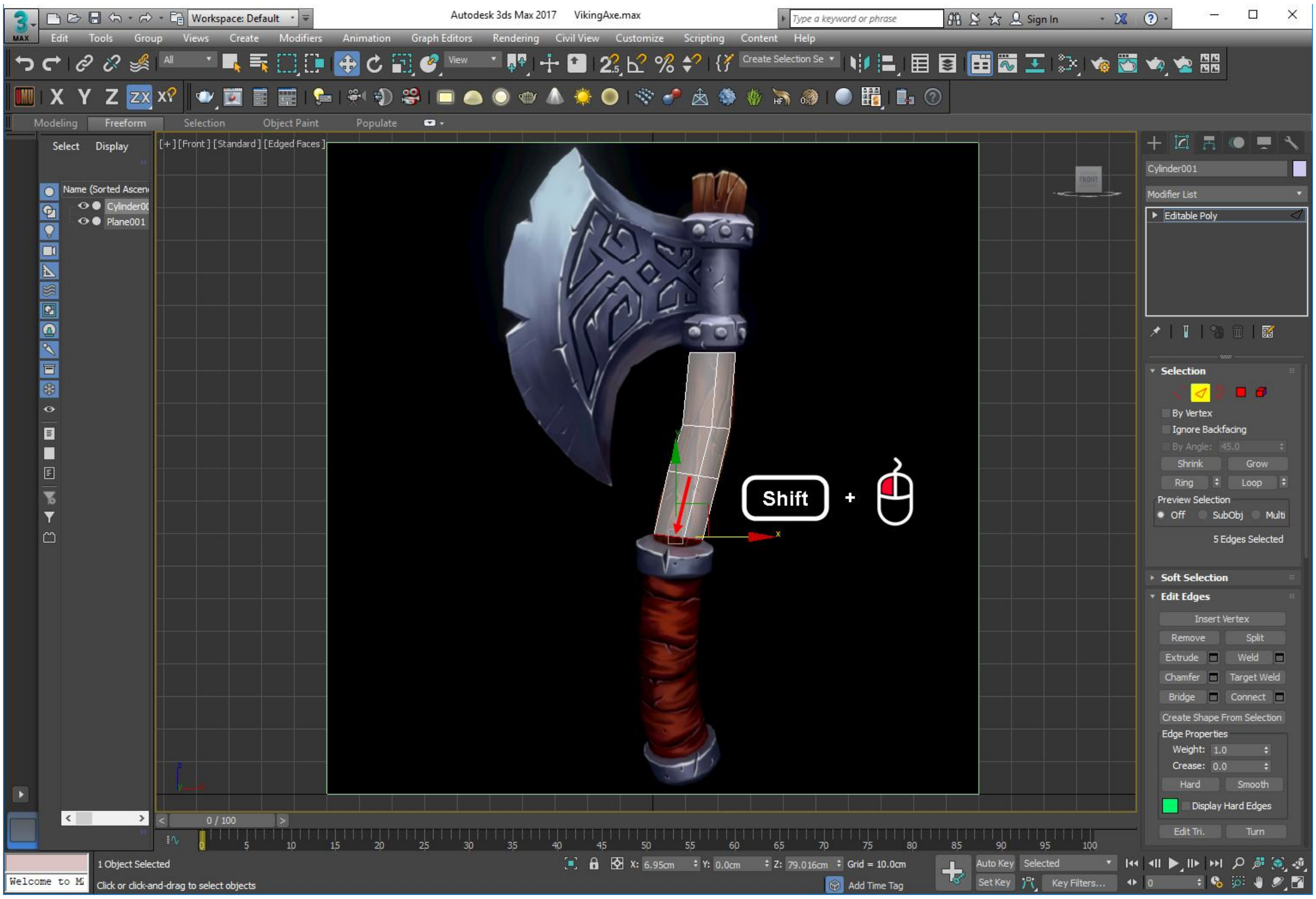


然后选择线 (Edges)

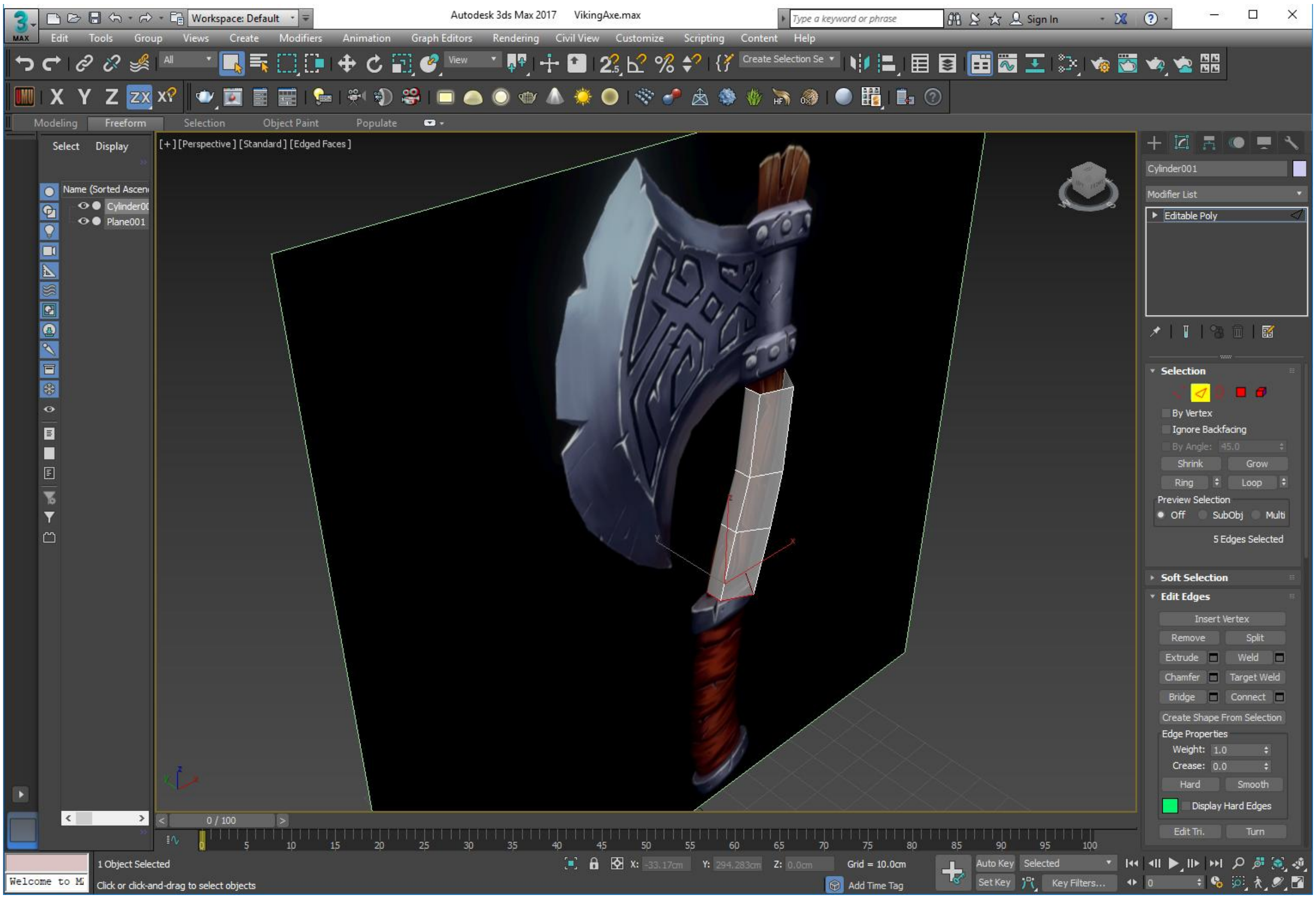


按着 Shift，然后把线往下拉

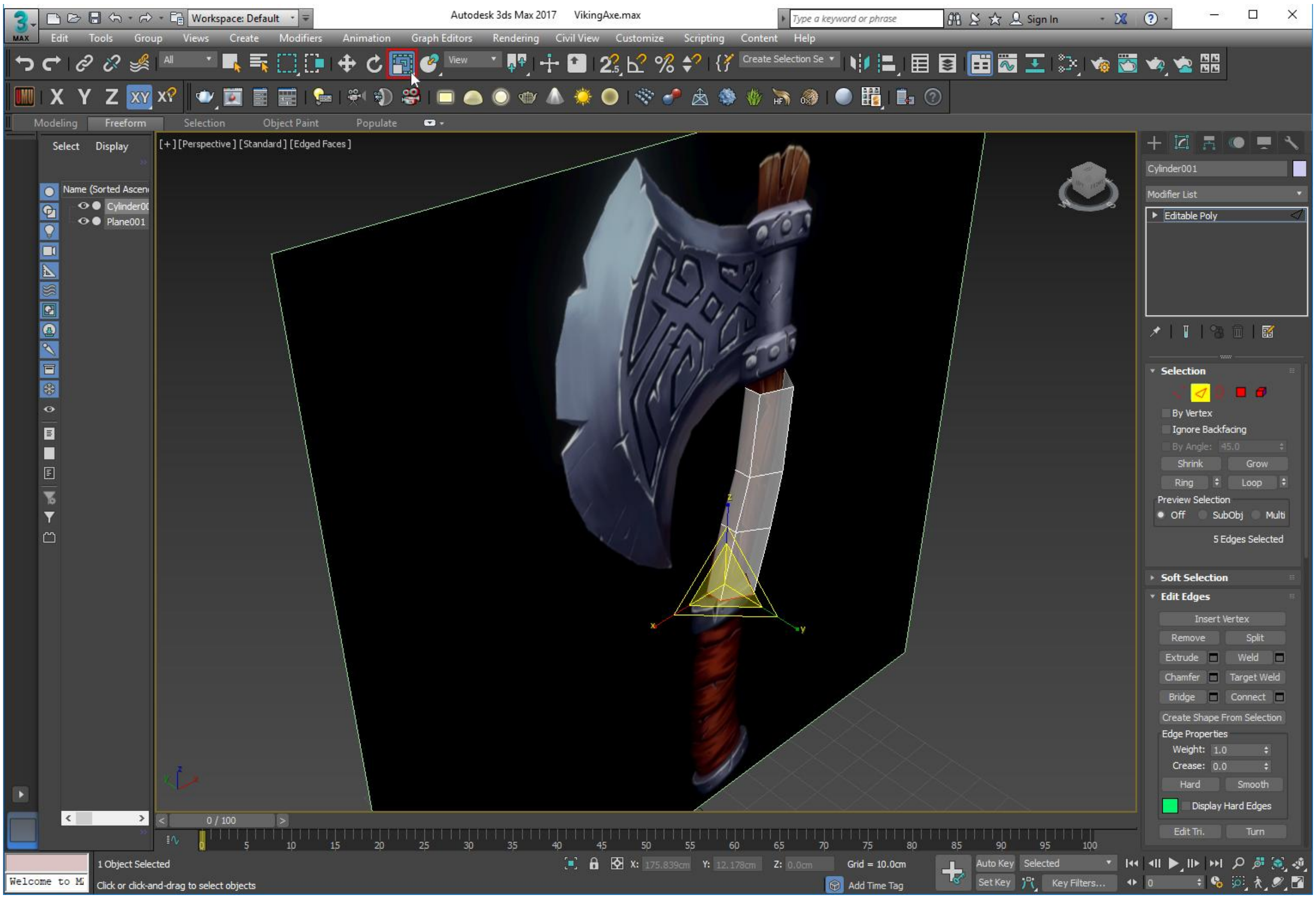




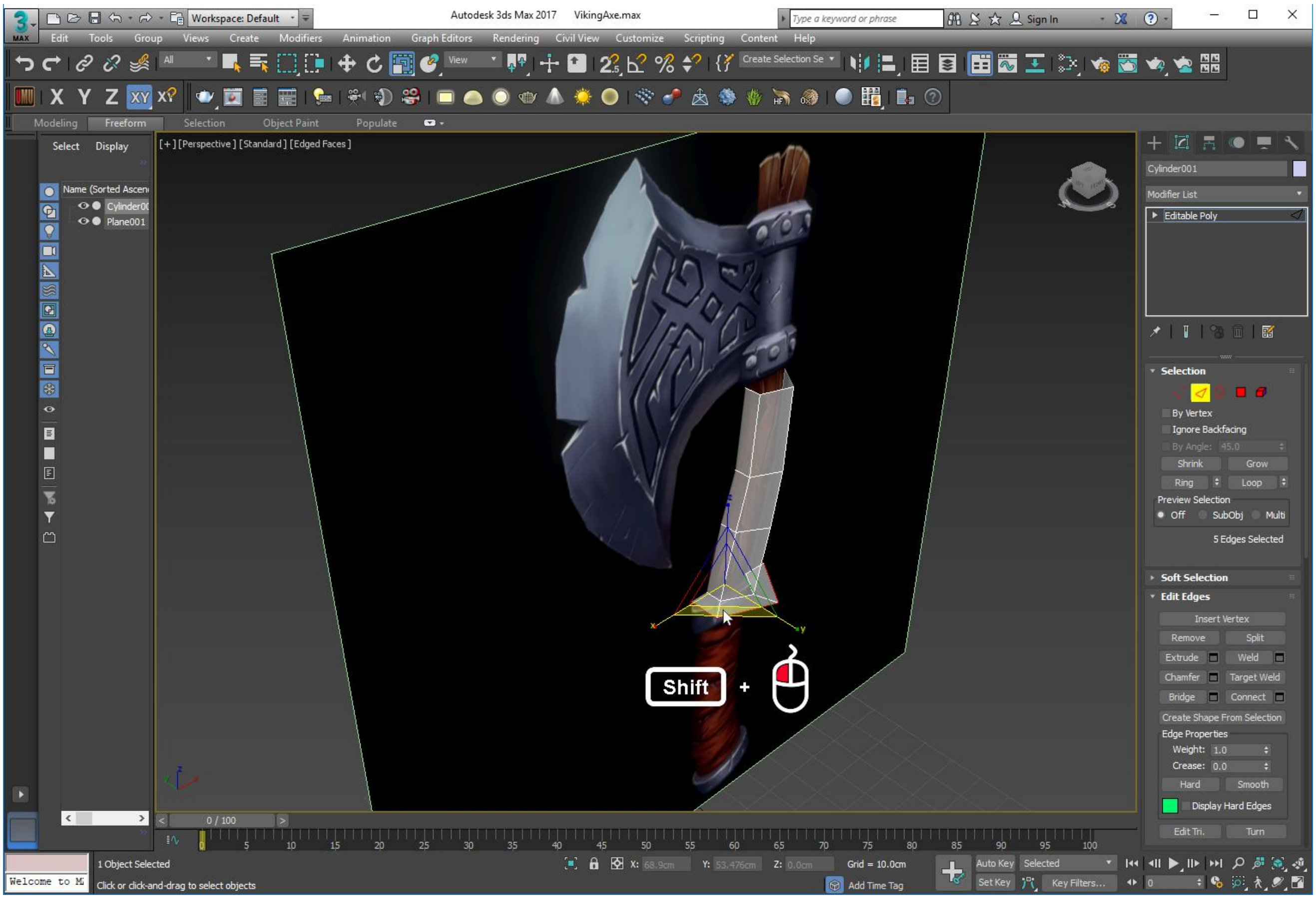
切换成 Perspective



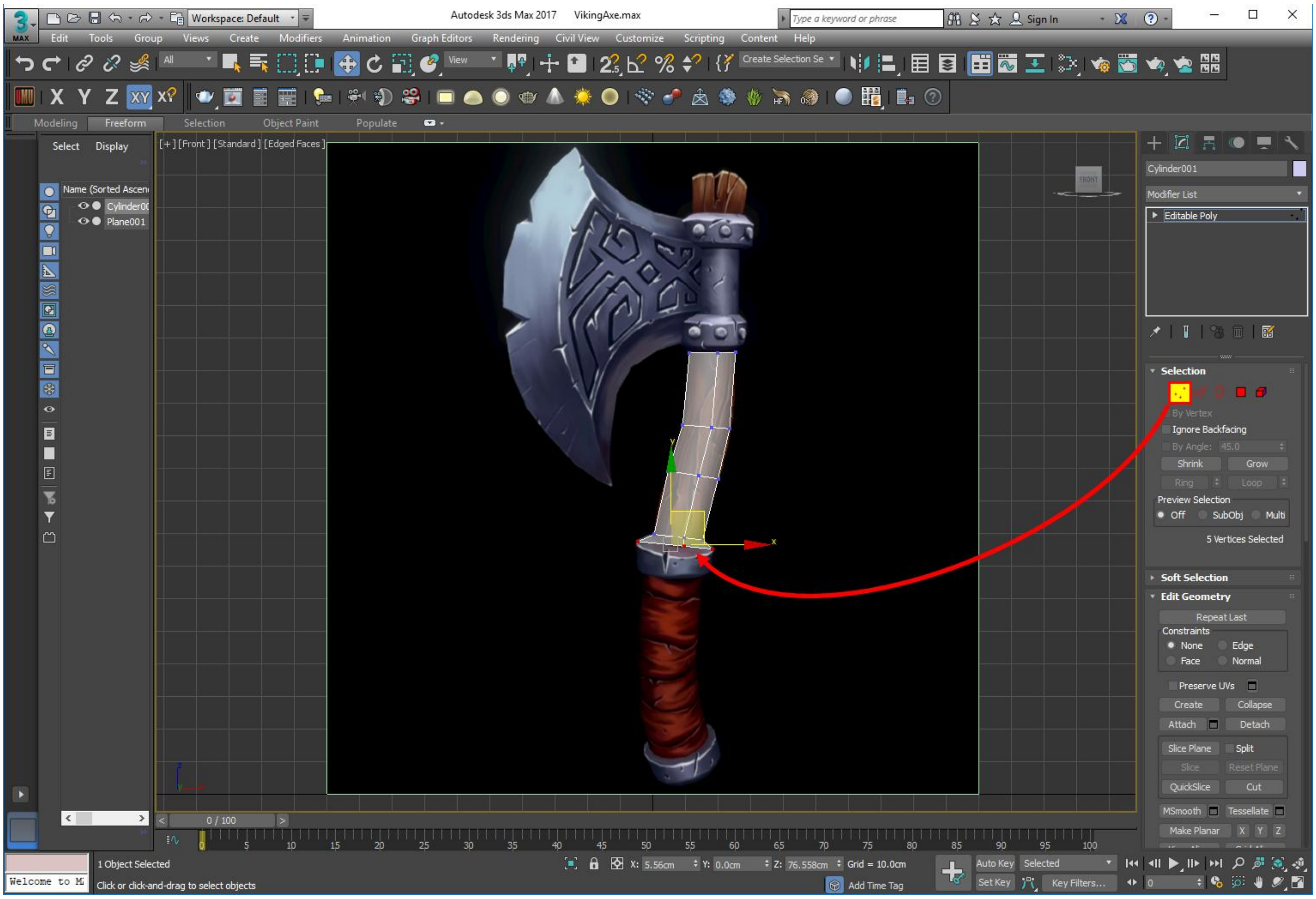
按下“Select and Uniform Scale”



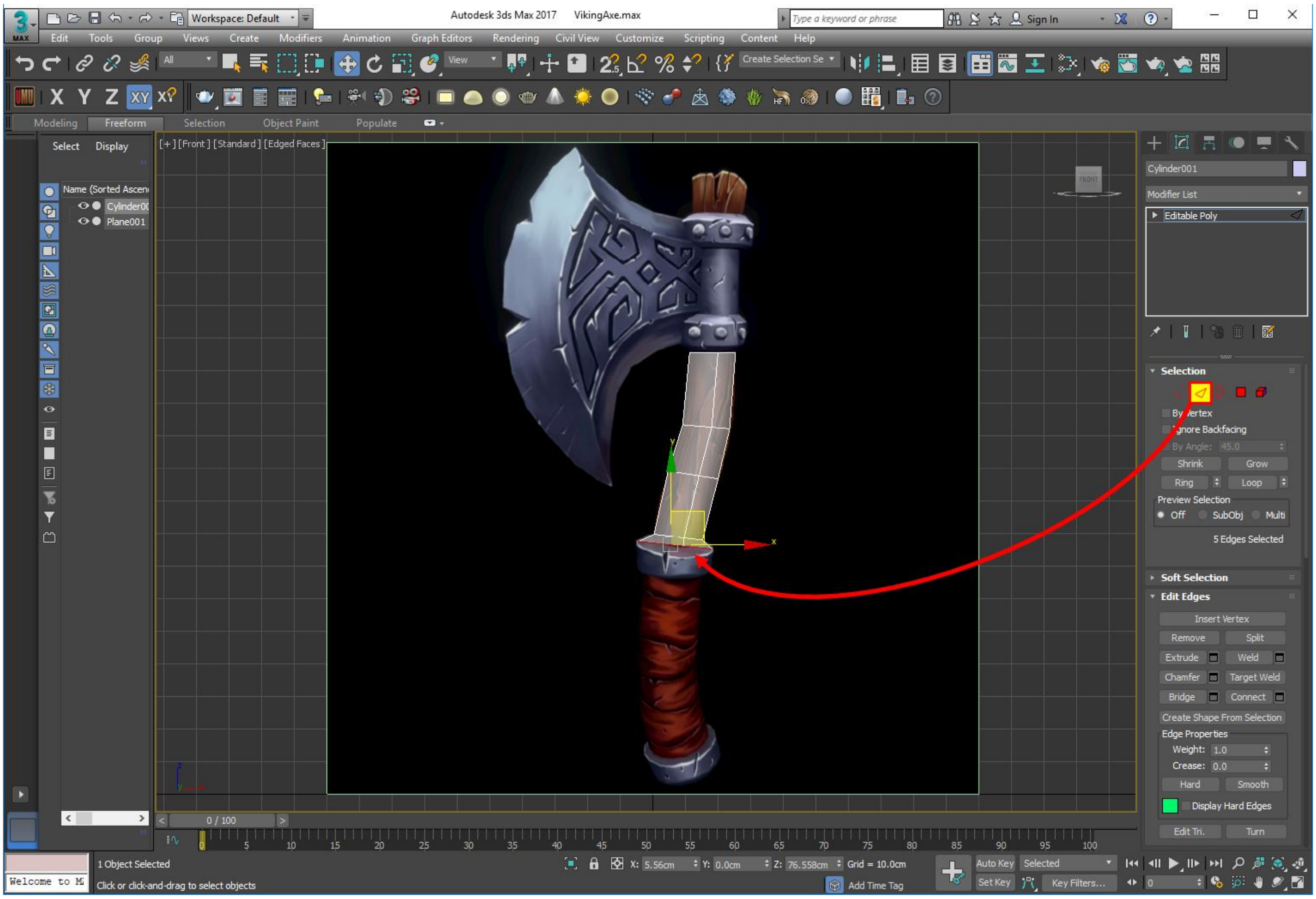
按着 Shift，然后用缩放，把线弄出来



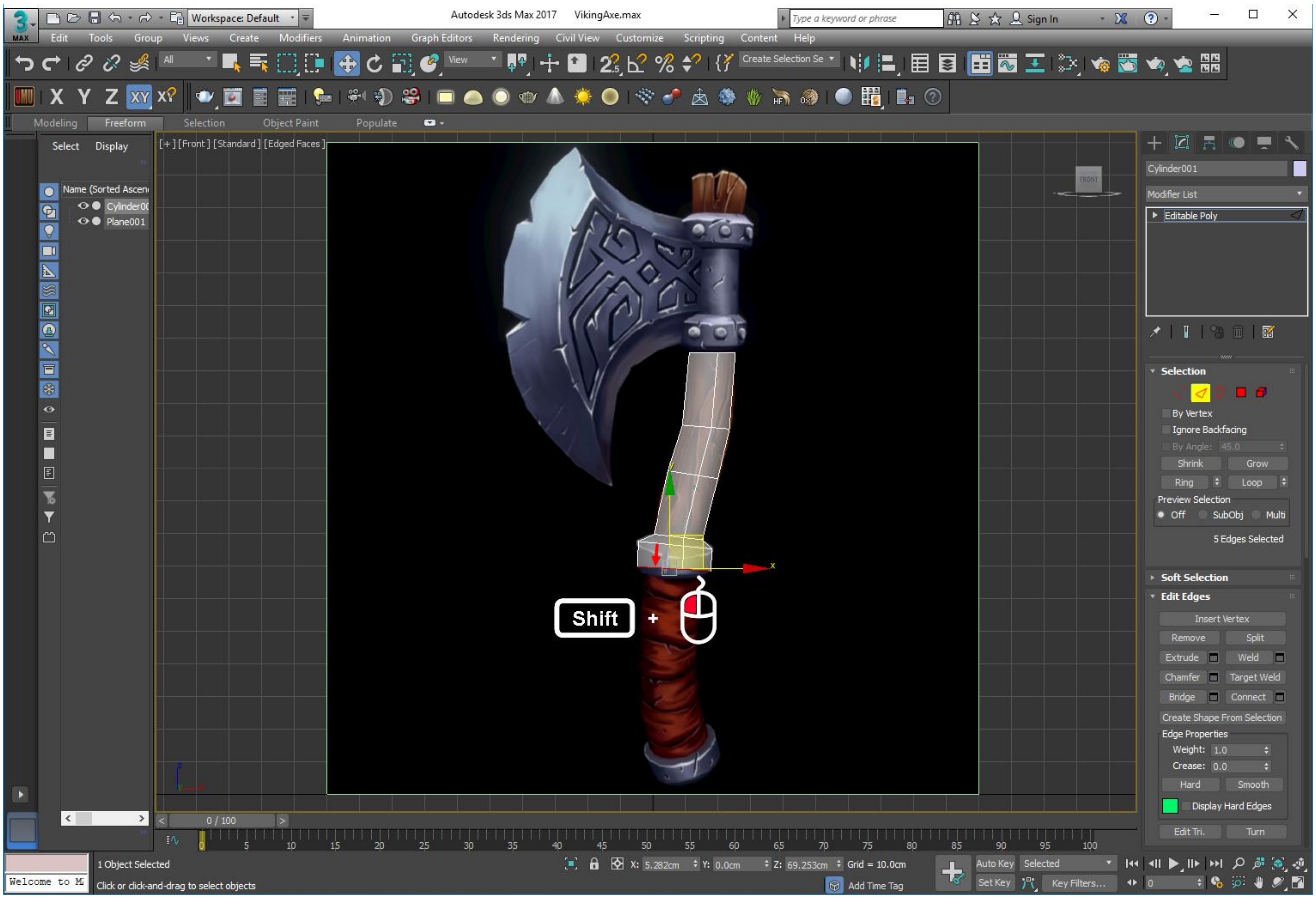
选择点 (vertex) 然后调整位子



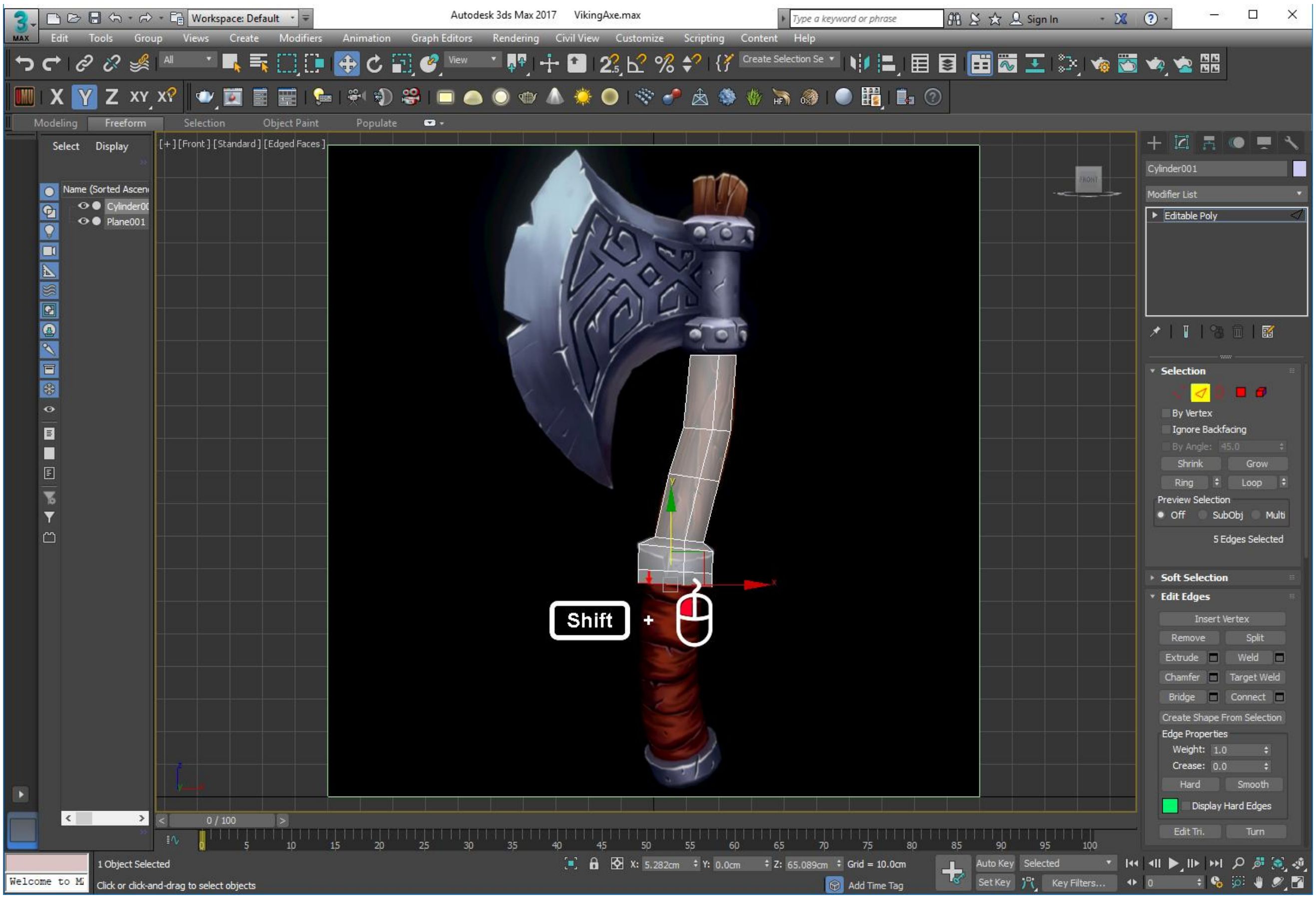
选择线 (Edges)



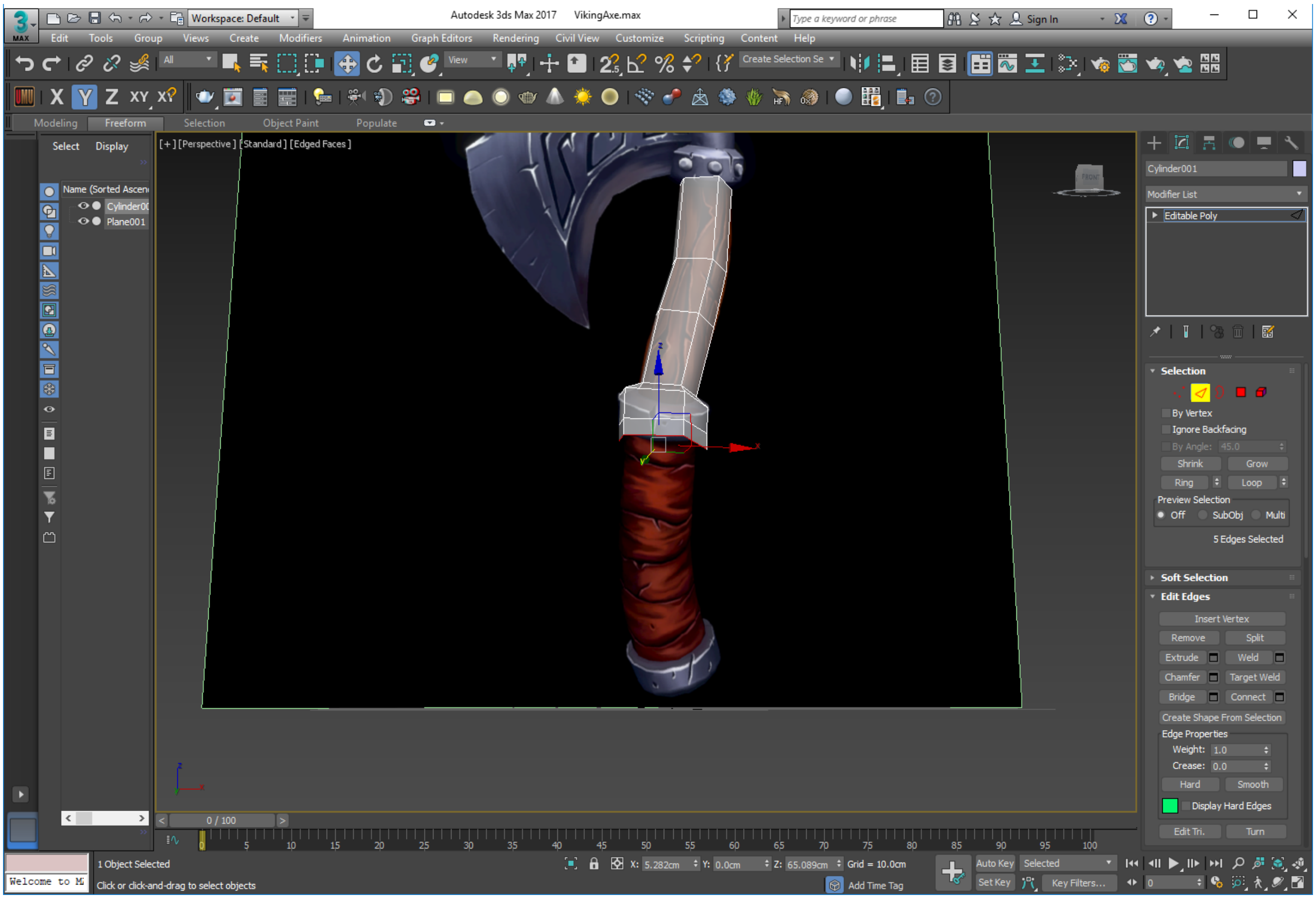
按着 Shift，把线拉下来



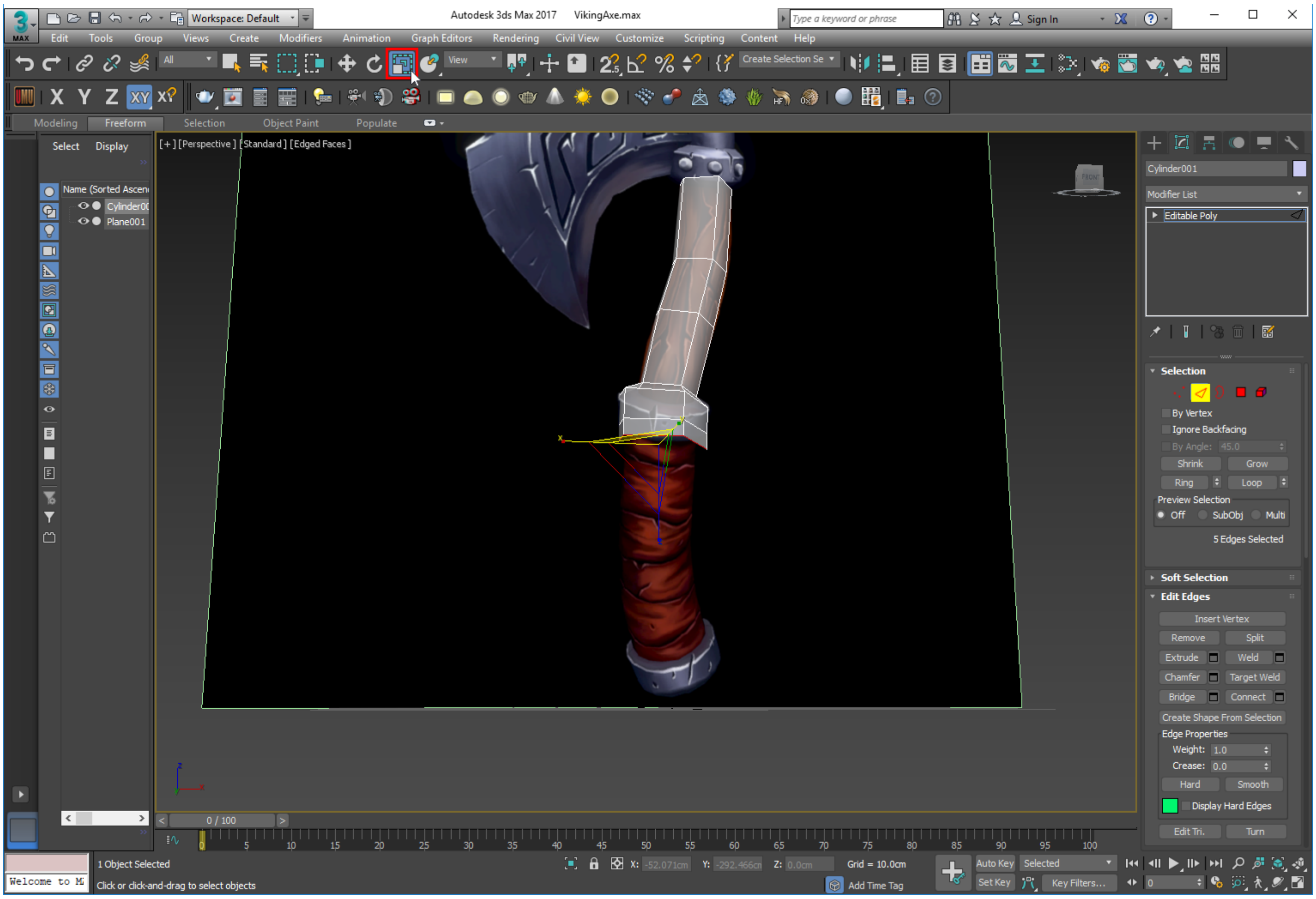
重复同样的步骤，按 Shift 把线拉下来



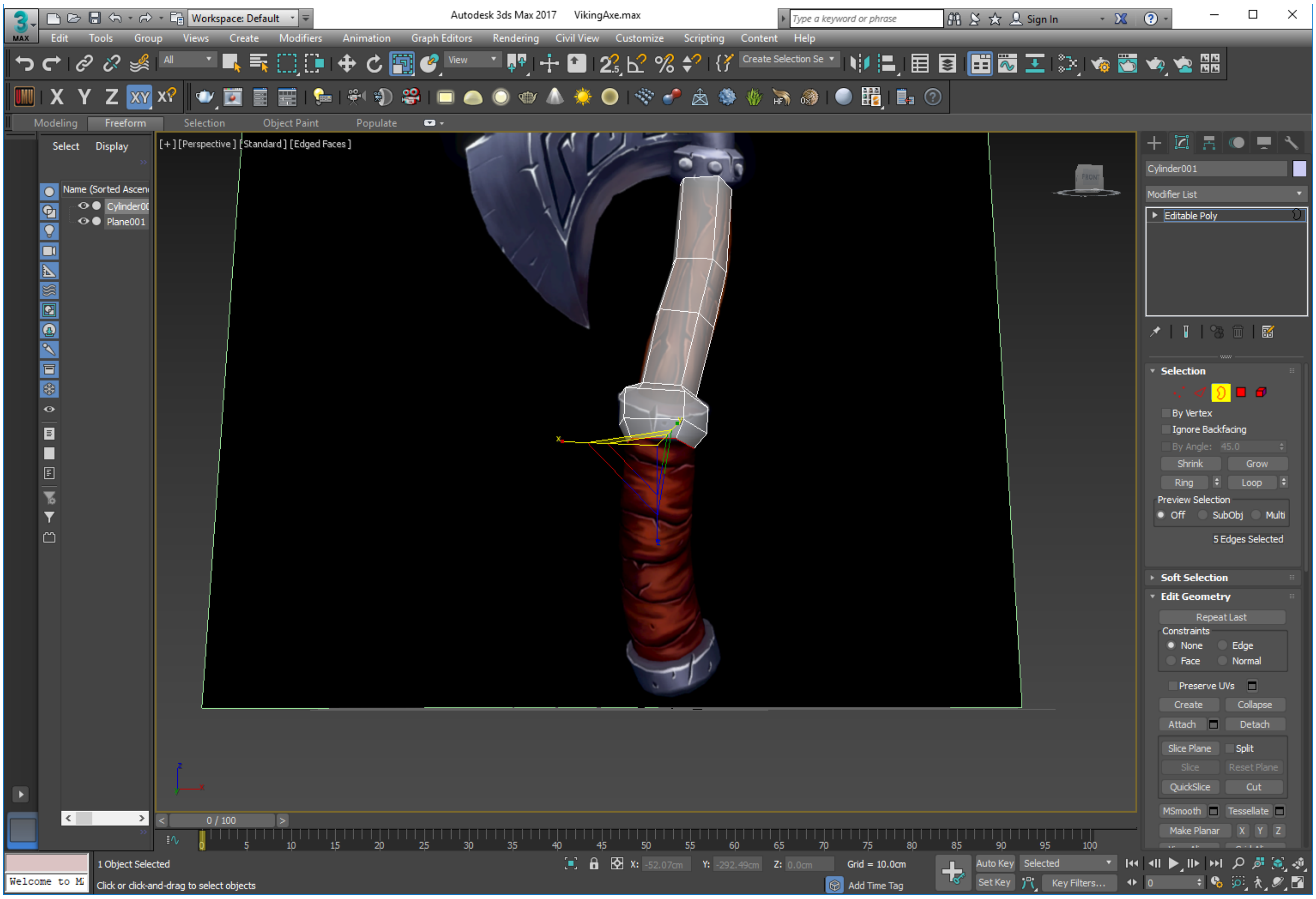
切换成 Perspective



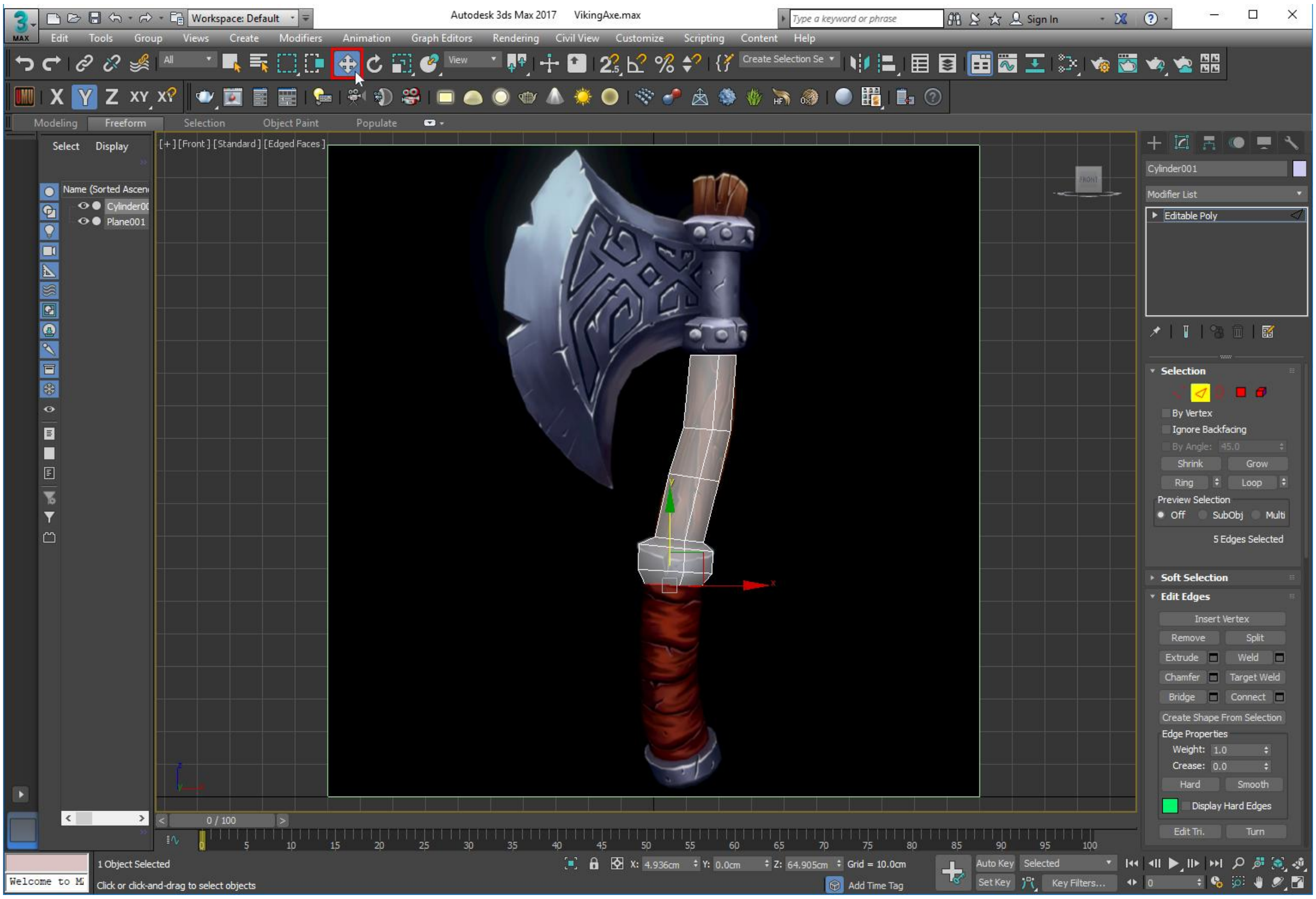
按下“Select and Uniform Scale”



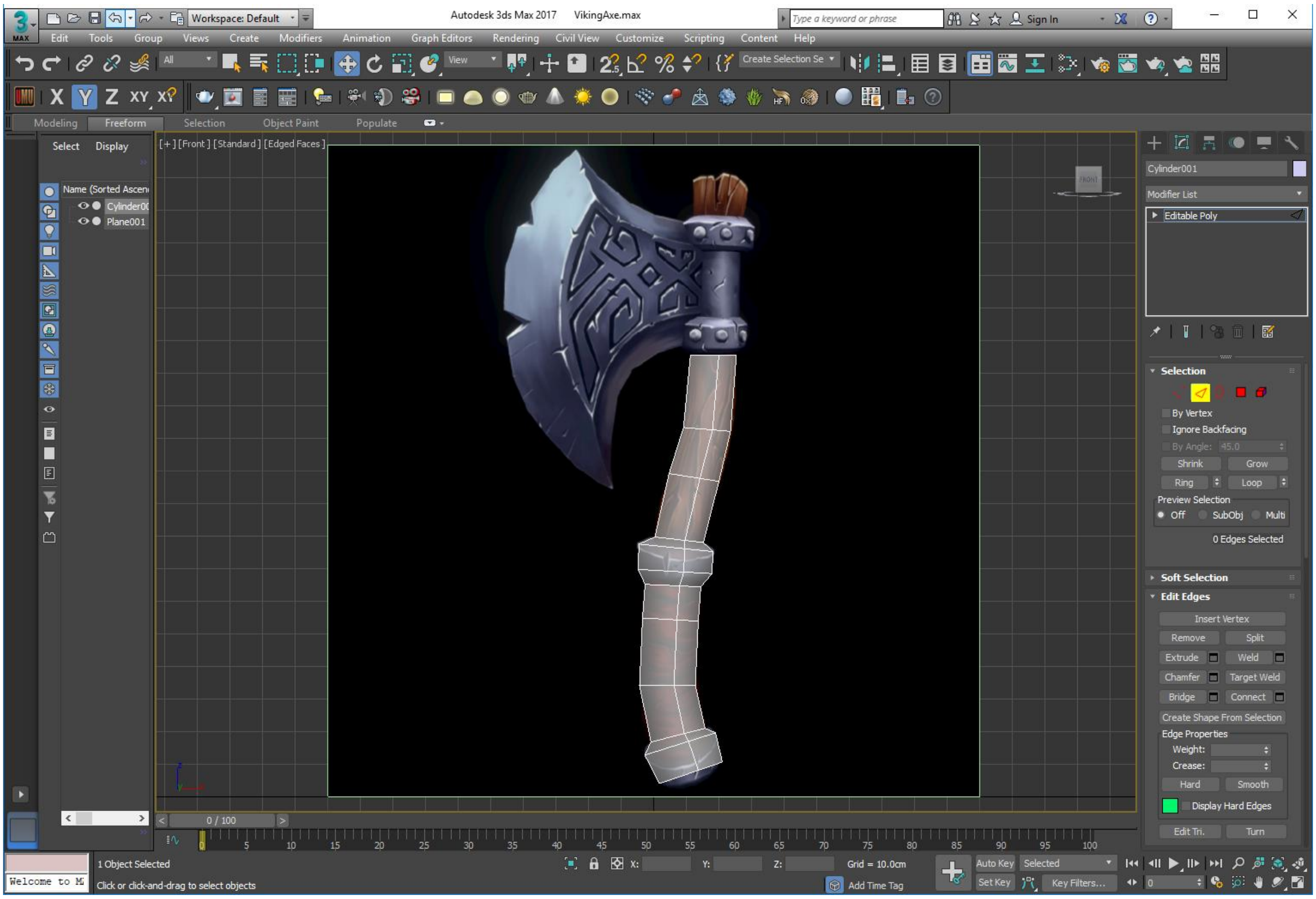
慢慢的调整 (大概大概)



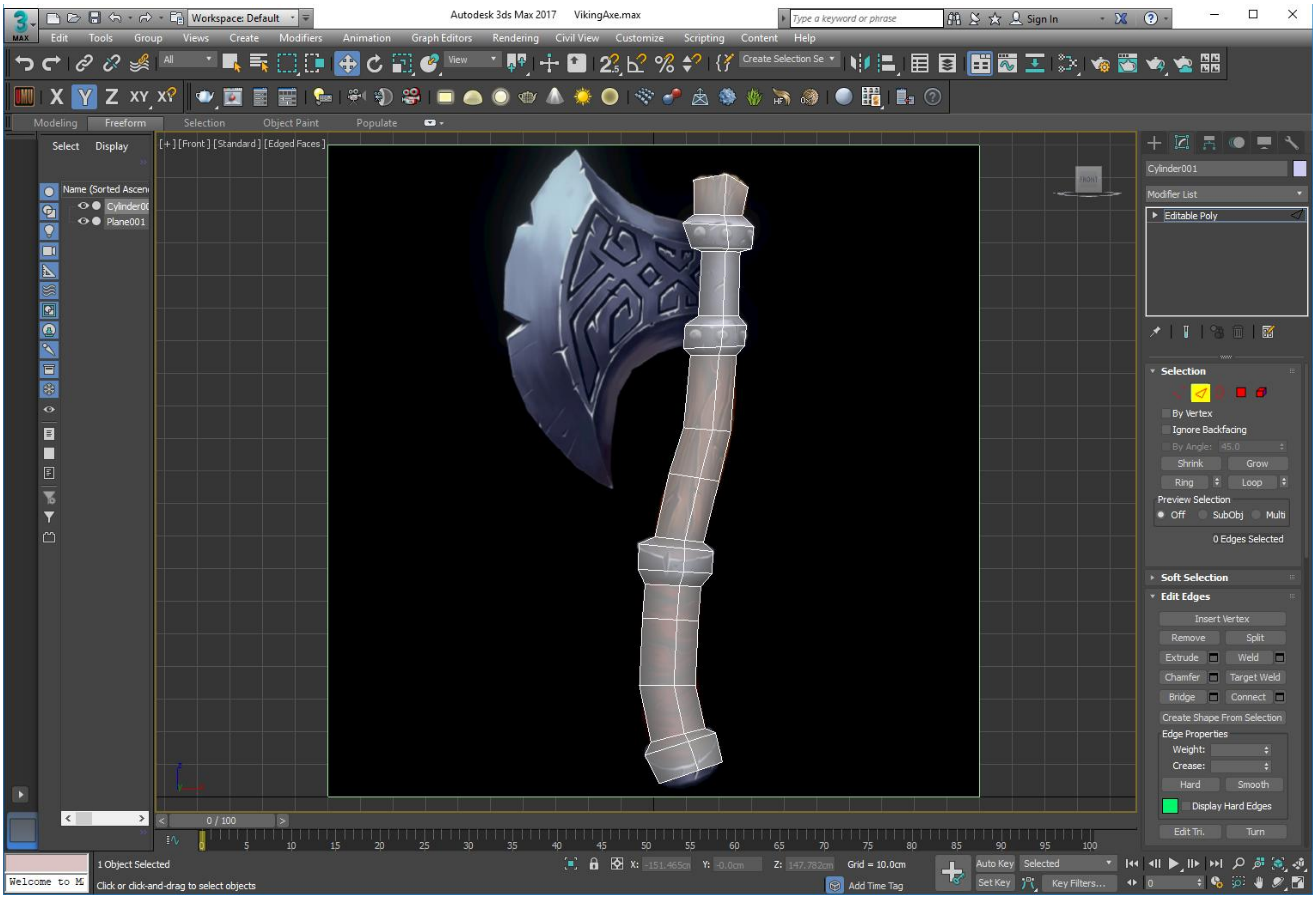
切换成 Orthographic



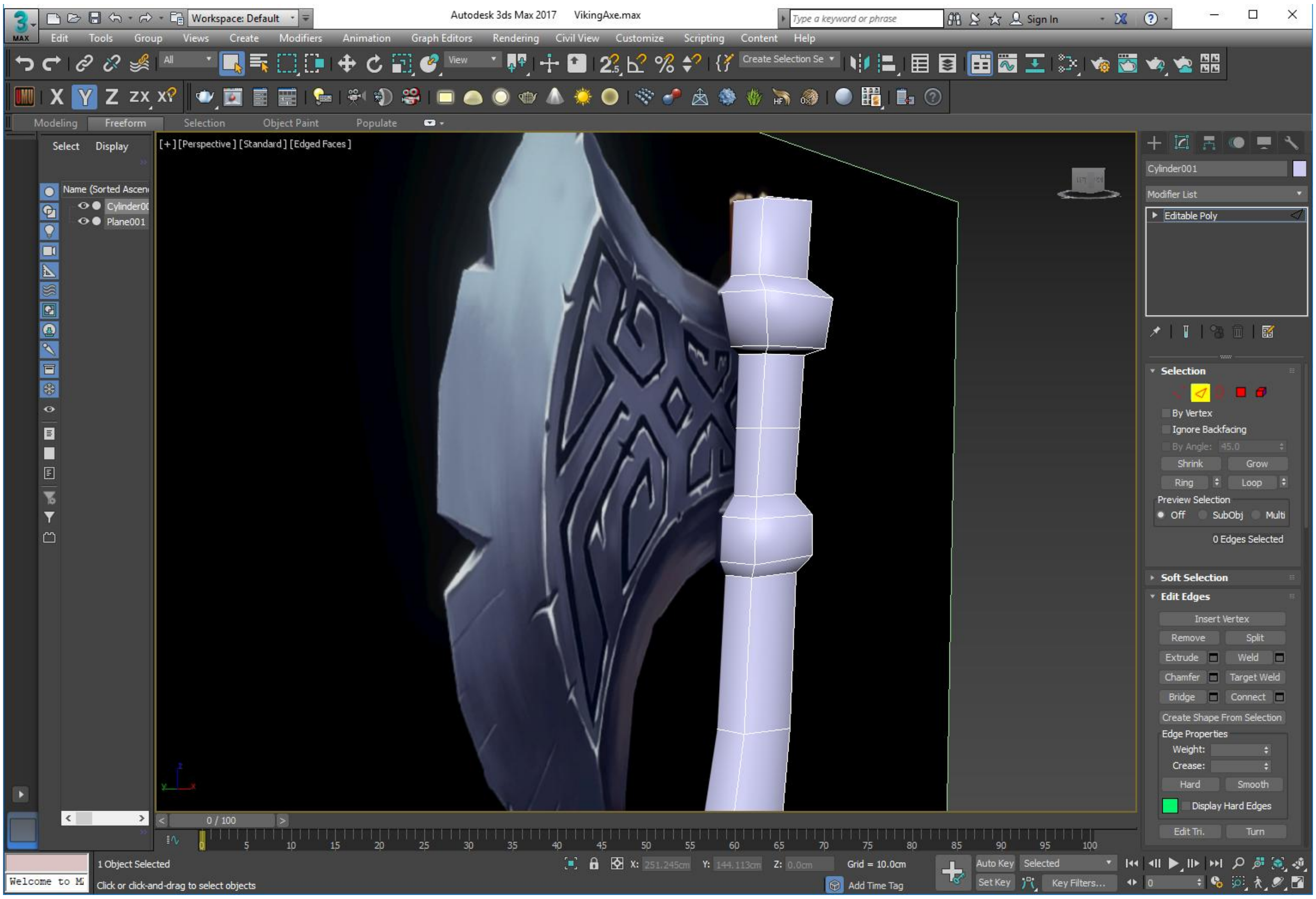
重复同样的步骤，按 Shift 把线拉下来，直到完成手把的部分



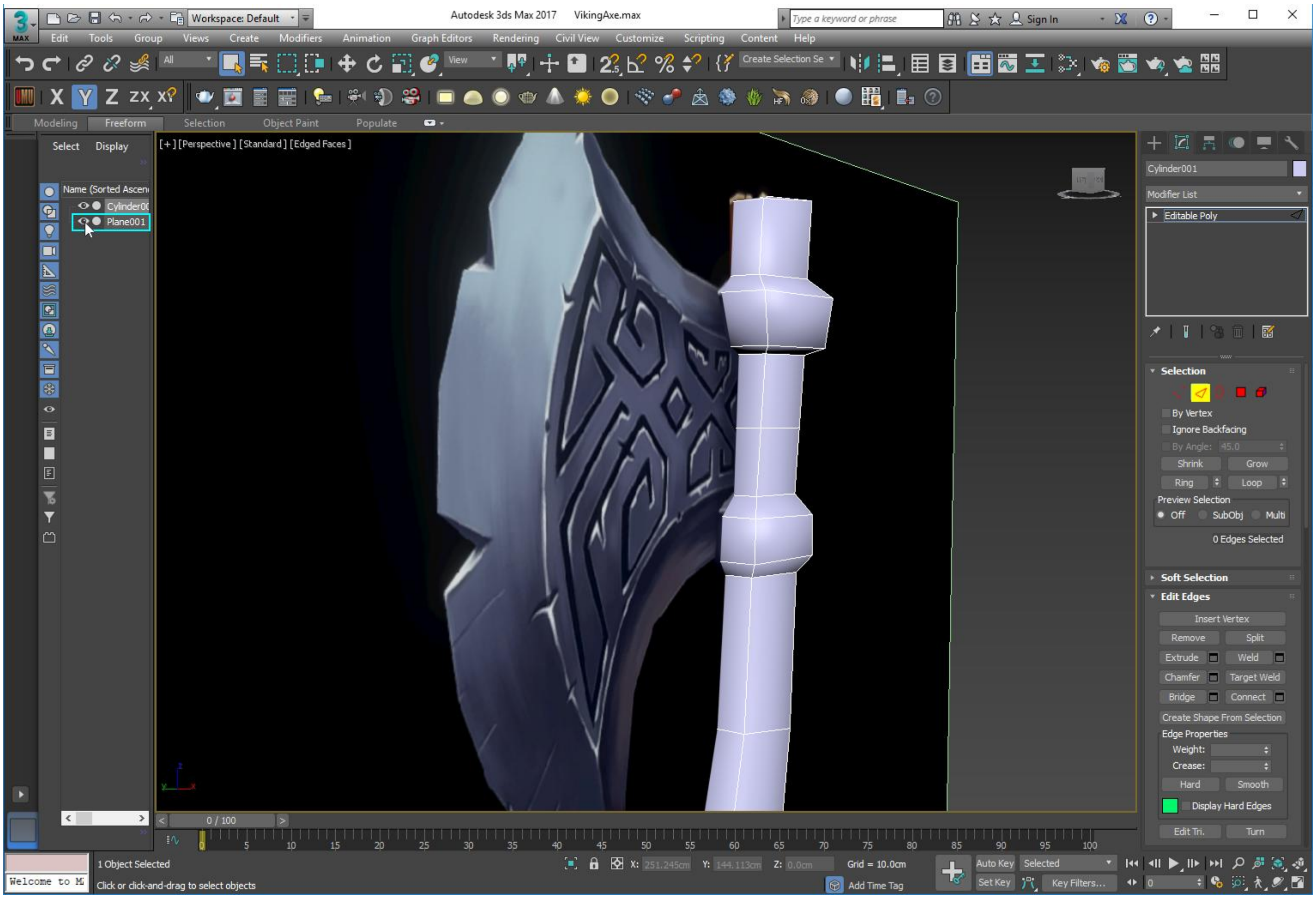
同样的步骤，把上面的部分



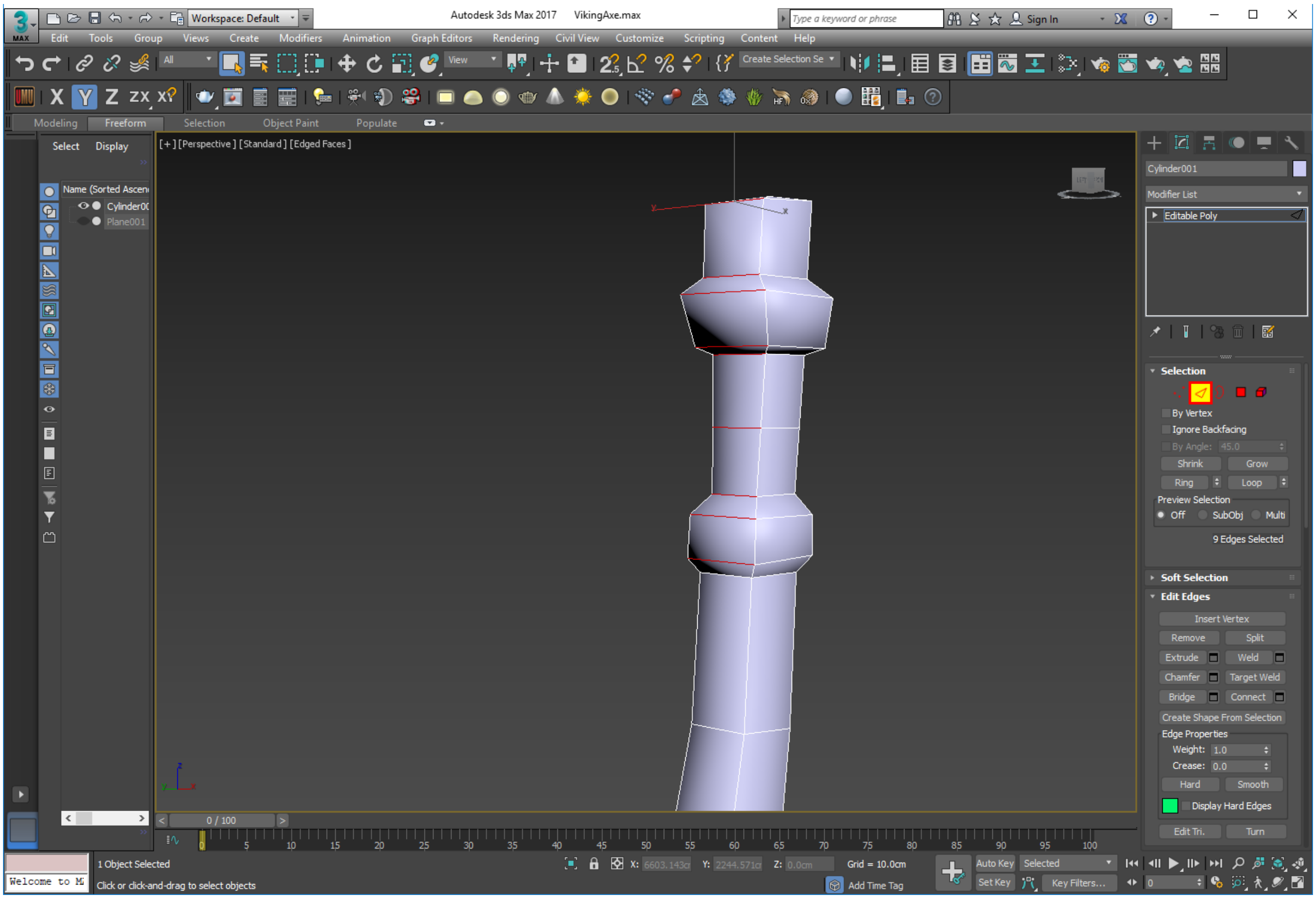
完成之后，接下来我们要做斧头刀面



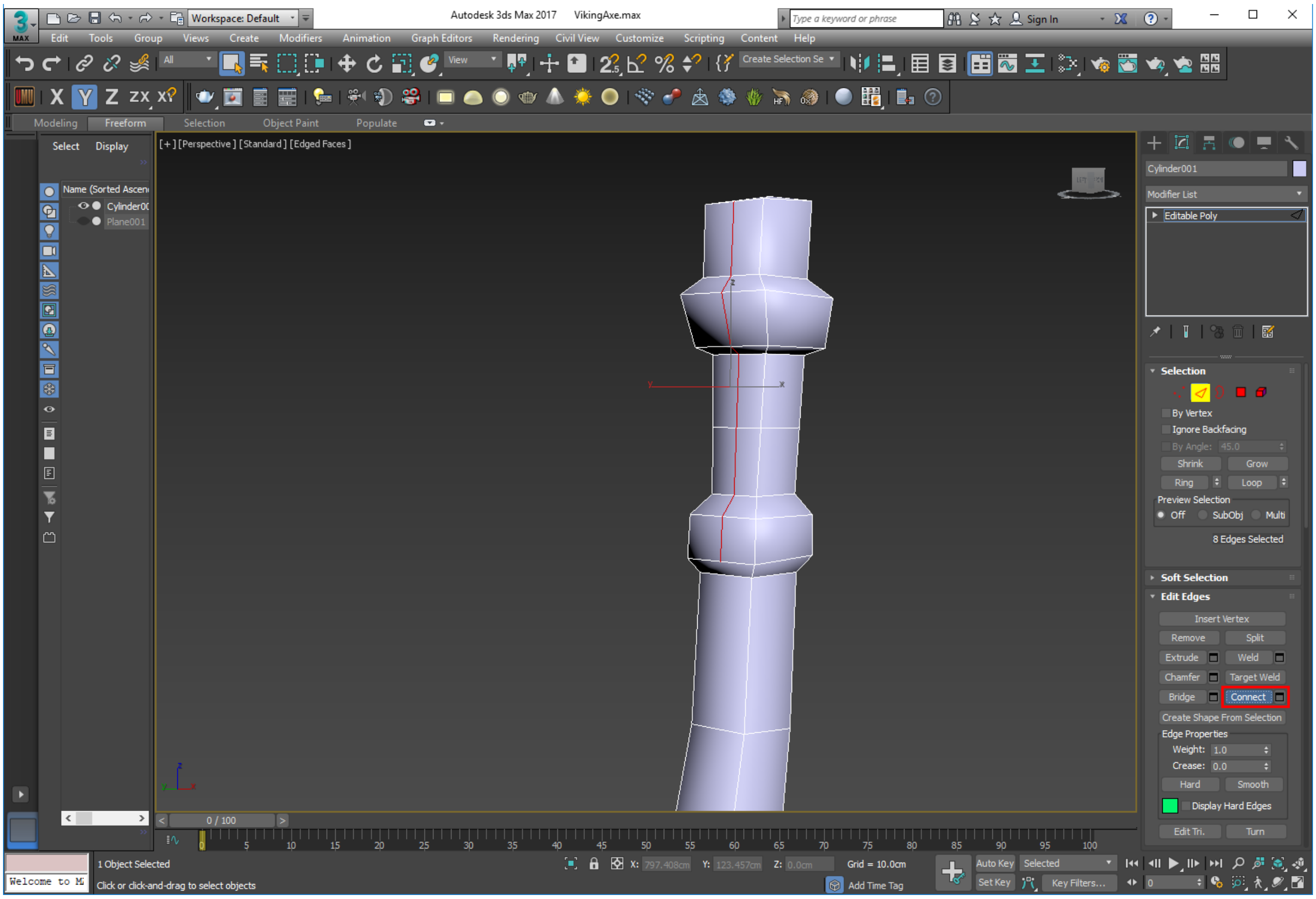
按下眼睛符号，来隐藏的斧头照片 Plane



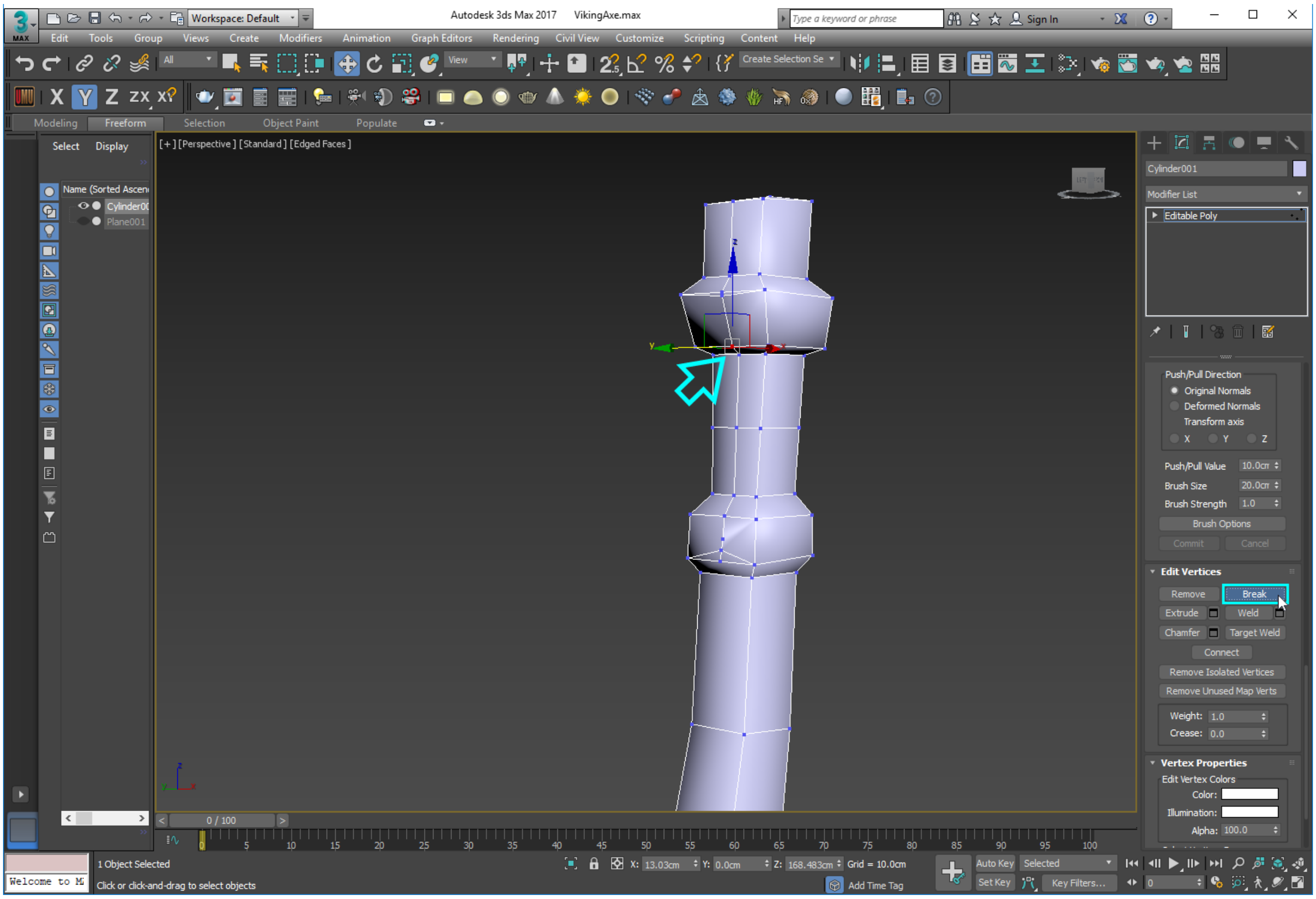
隐藏之后，选择这些线，因为我们要在这里建立一条线



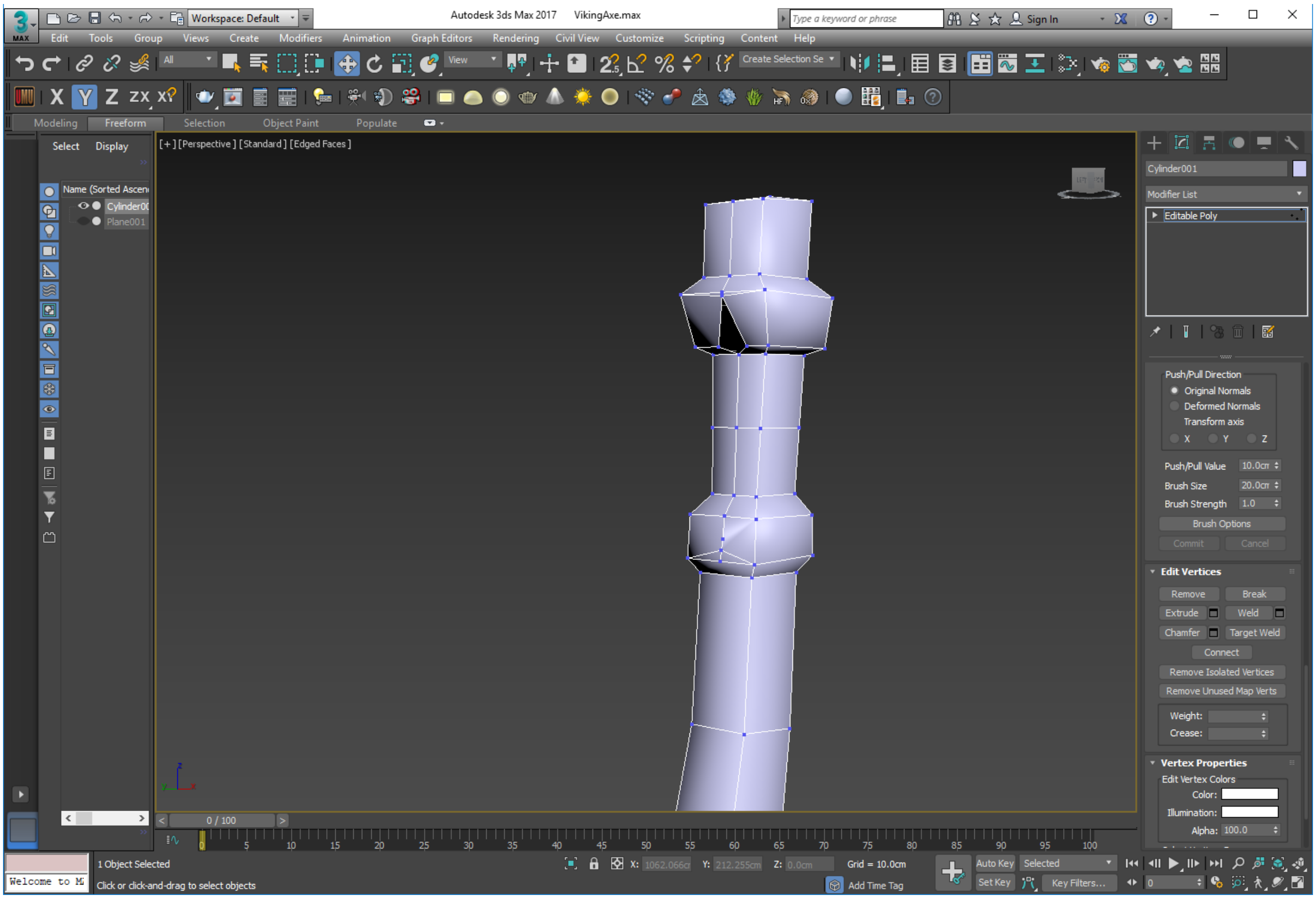
按下“Connect”，就把刚刚选择的线连接起来了



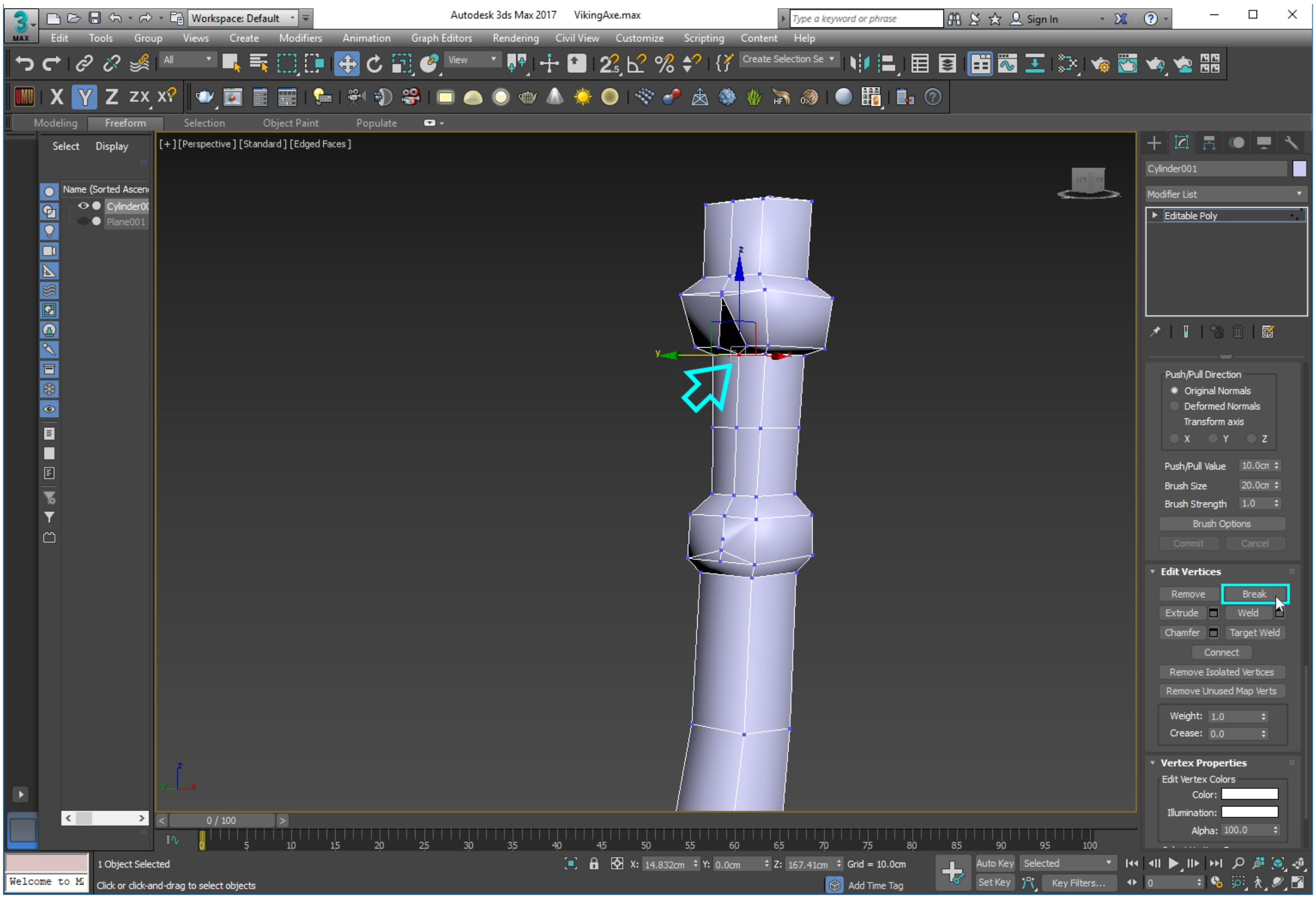
选择点 (vertex)，然后我们按“break”



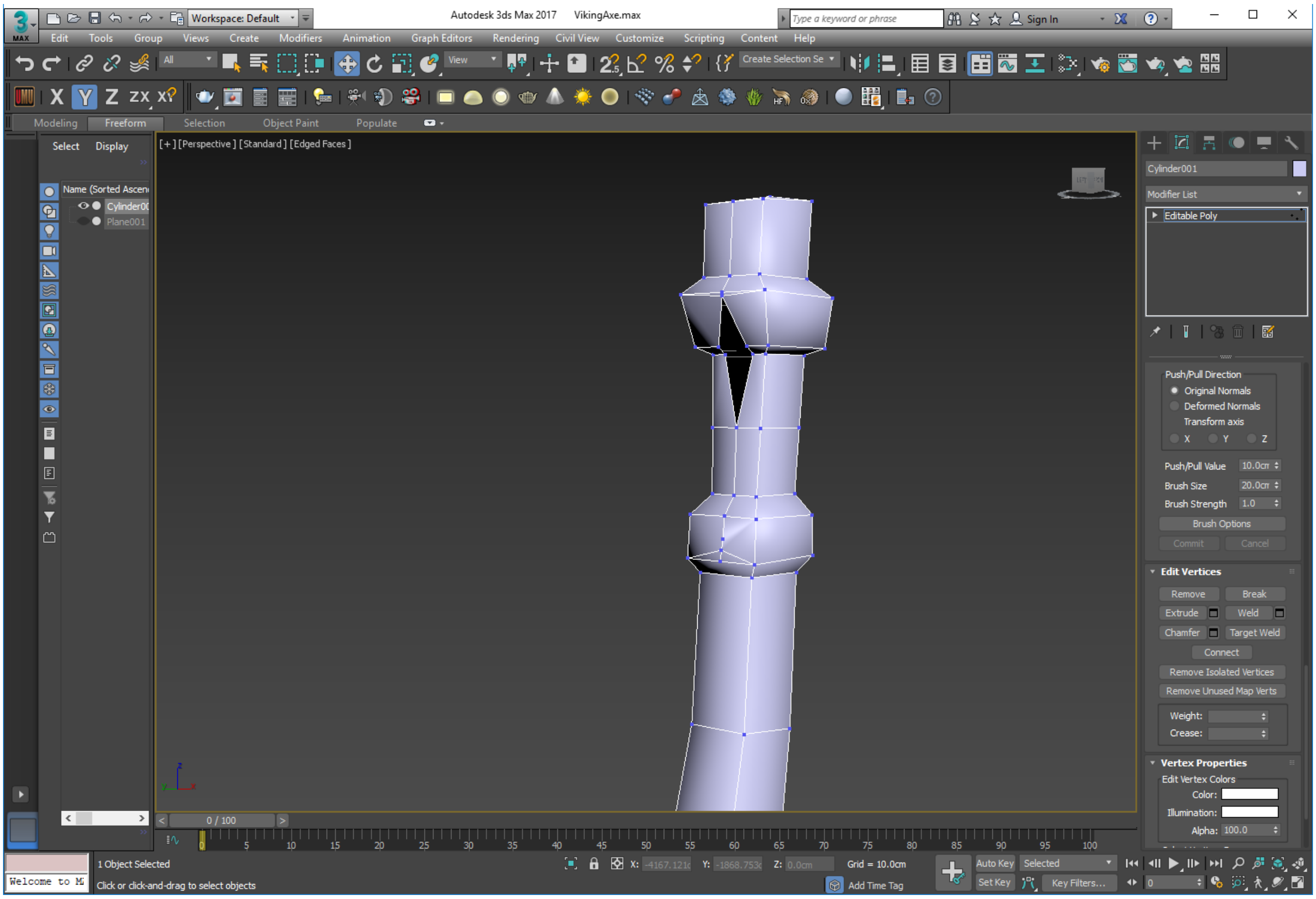
Break 之后，拉开一个小洞



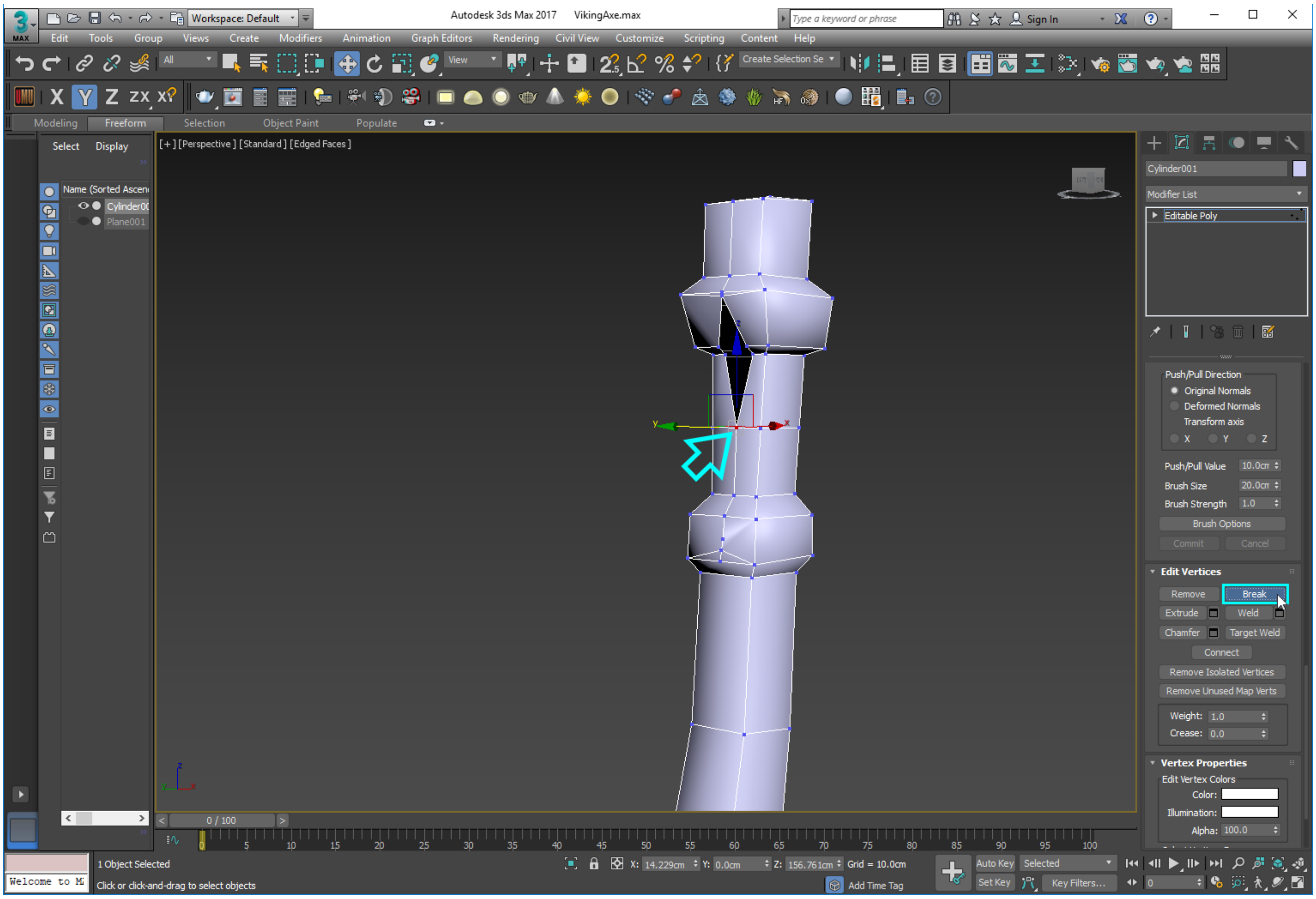
重复同样的步骤，选点 (vertex)，然后按“break”



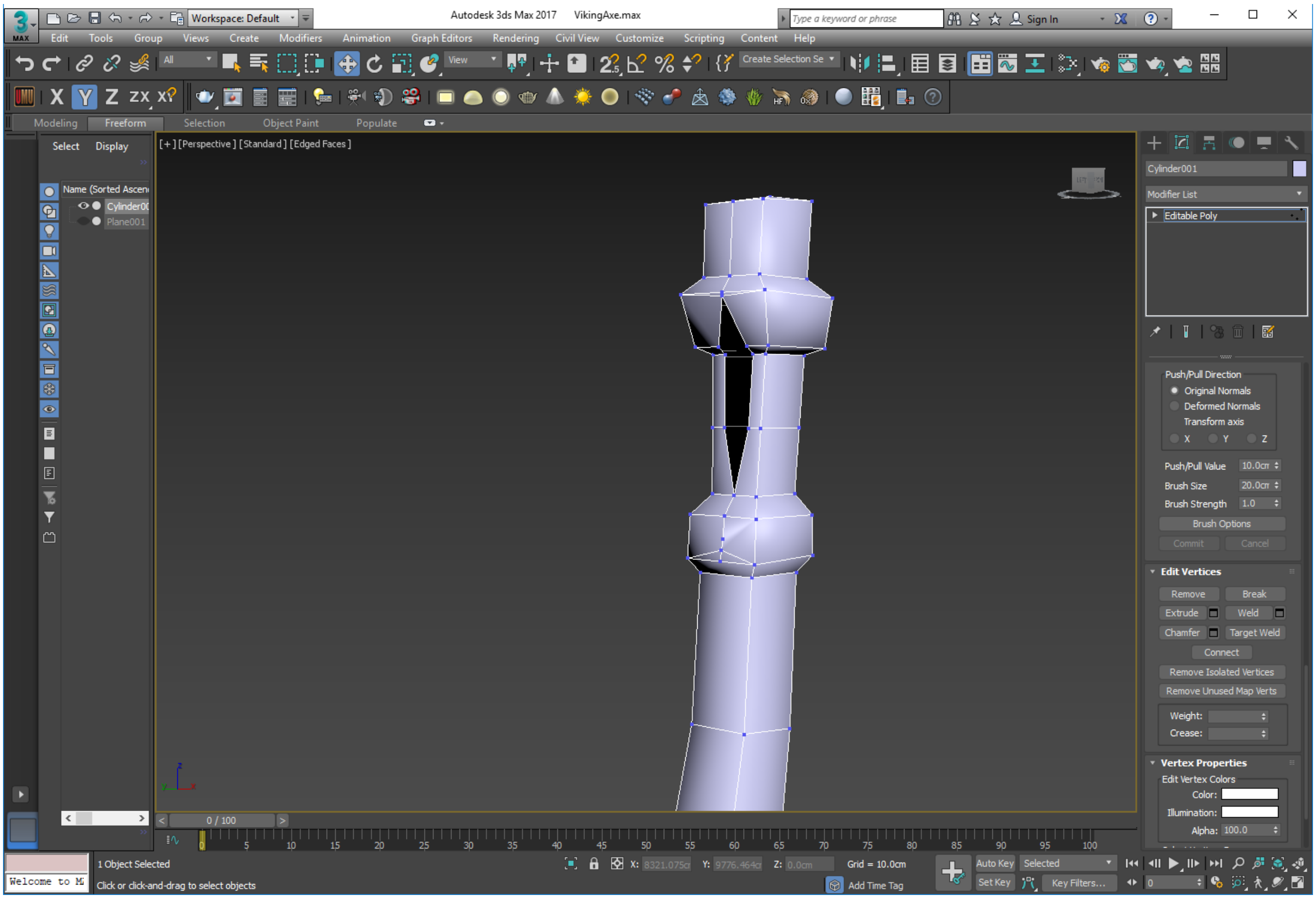
同样的，break 了之后，选点然后拉开，形成一个洞



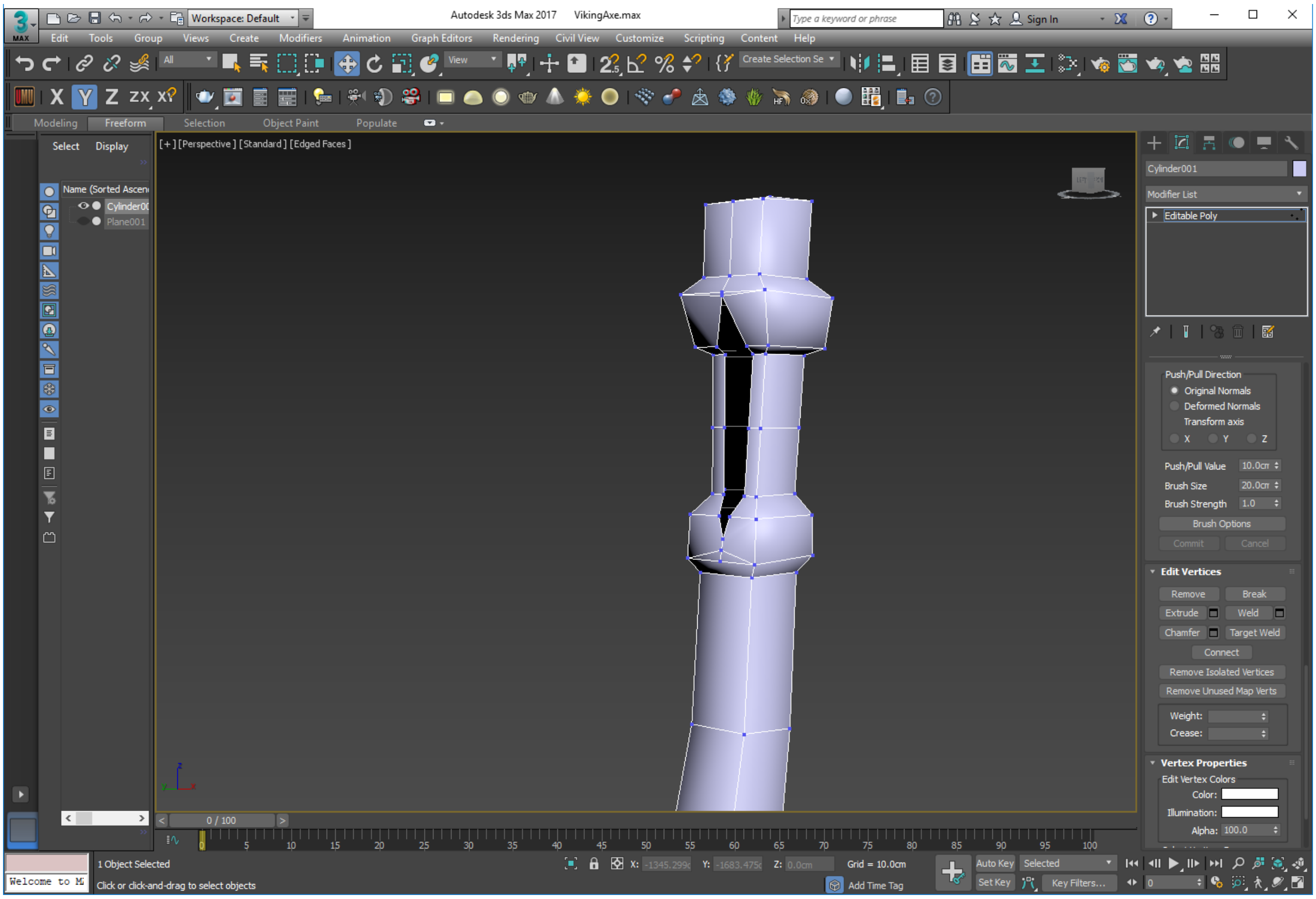
重复同样的步骤，选点 (vertex)，然后按“break”



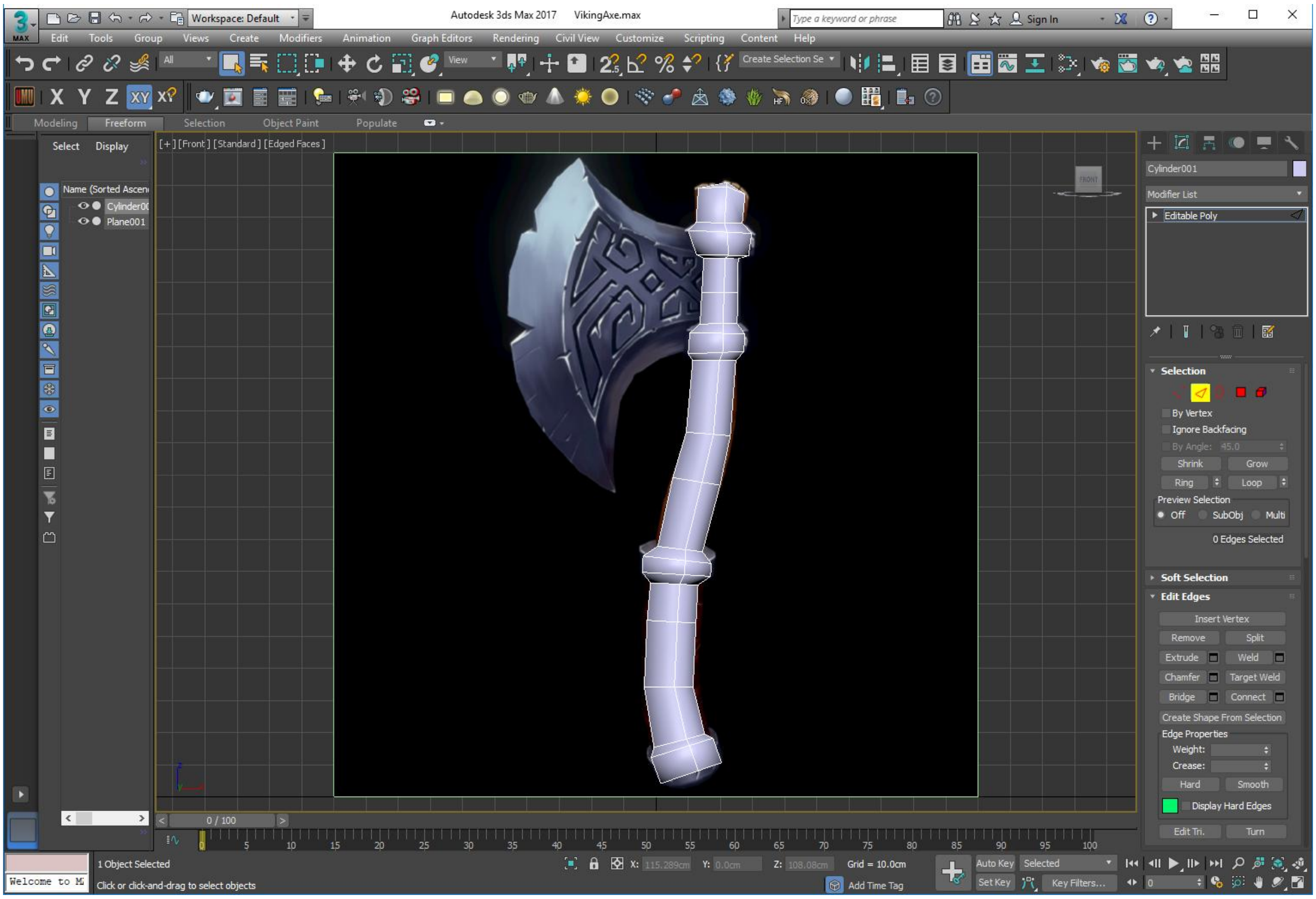
调整点 (vertex)，然后拉开洞



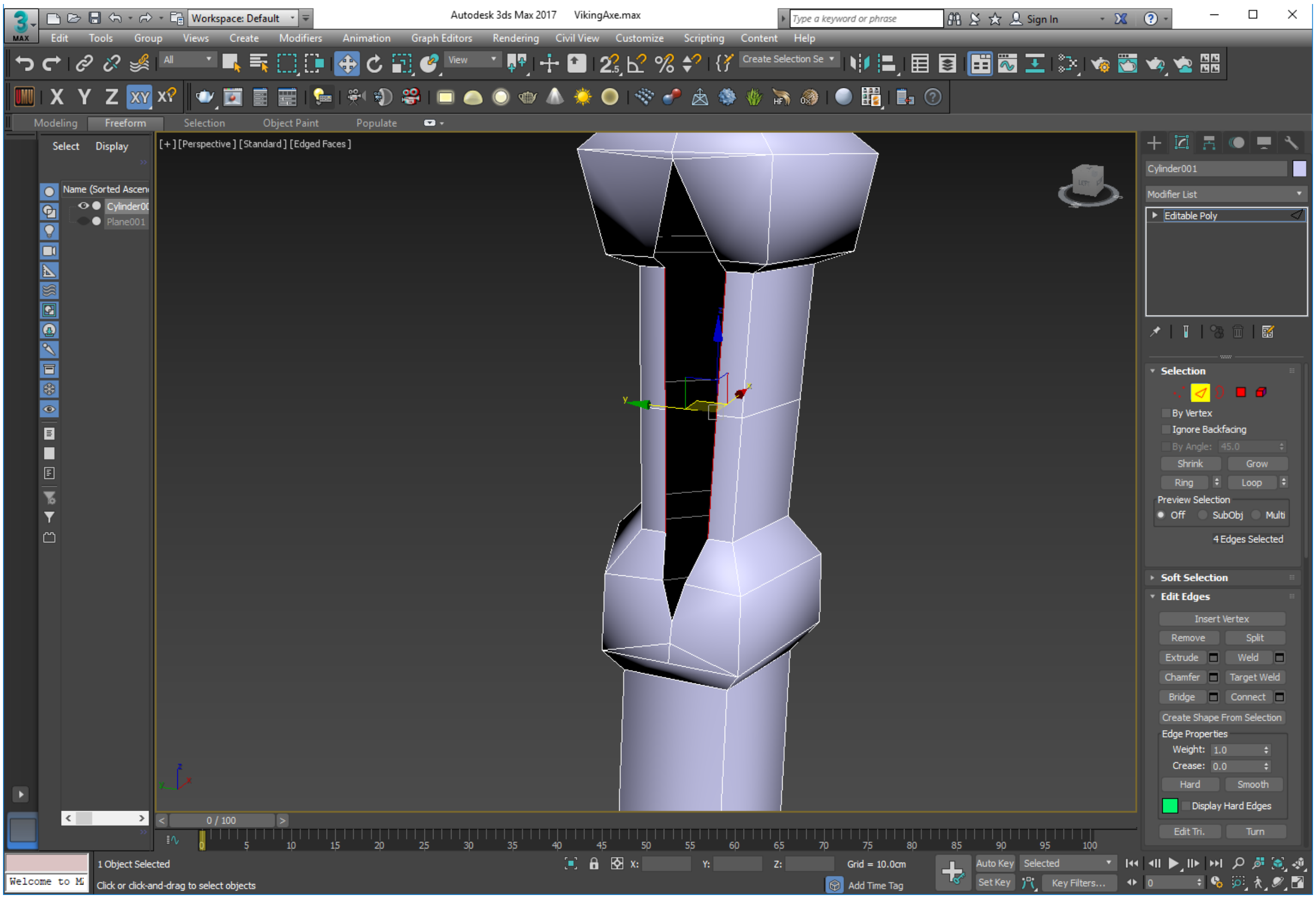
一直重复步骤，直到像这样子



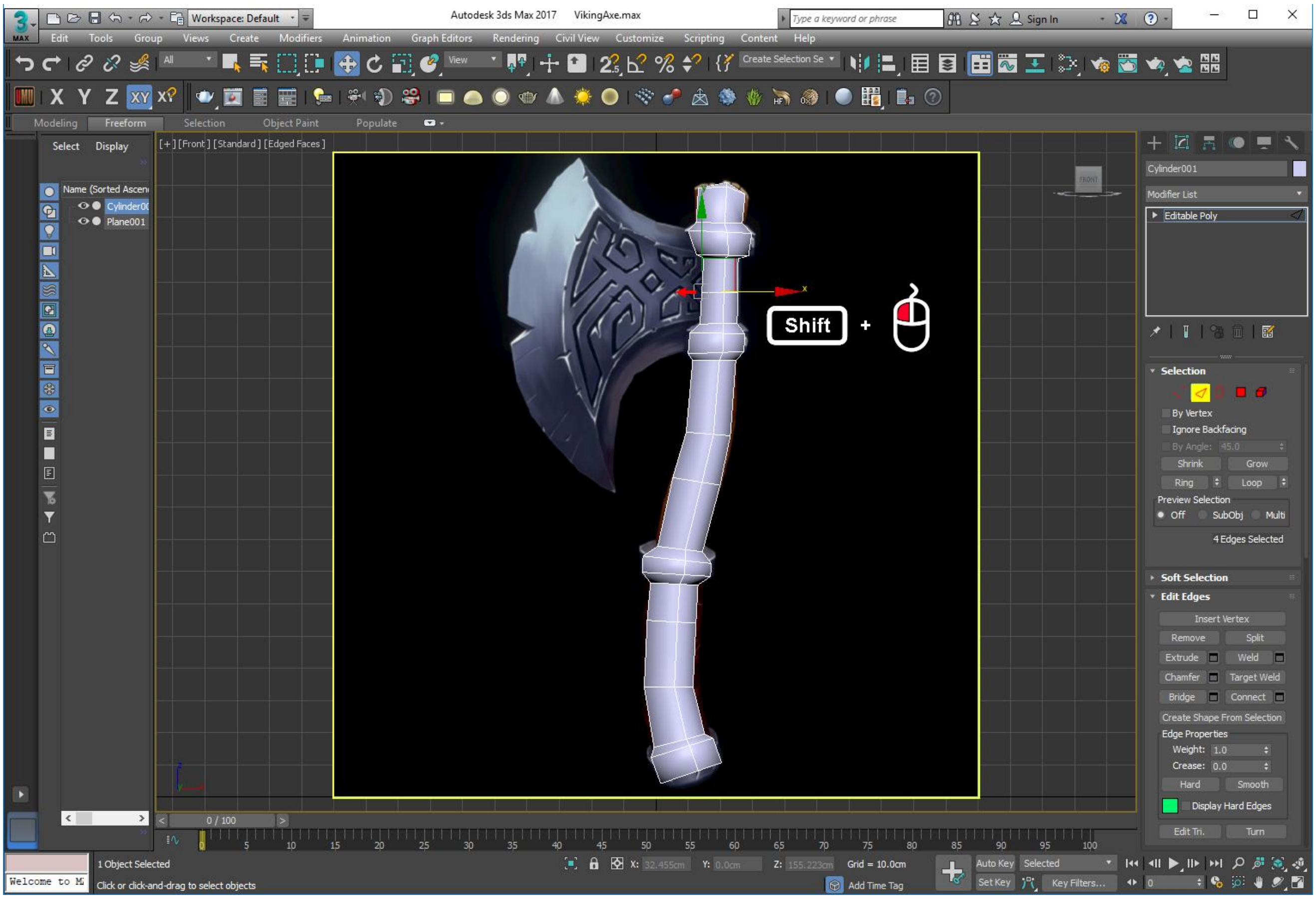
打开刚刚隐藏的斧头图片



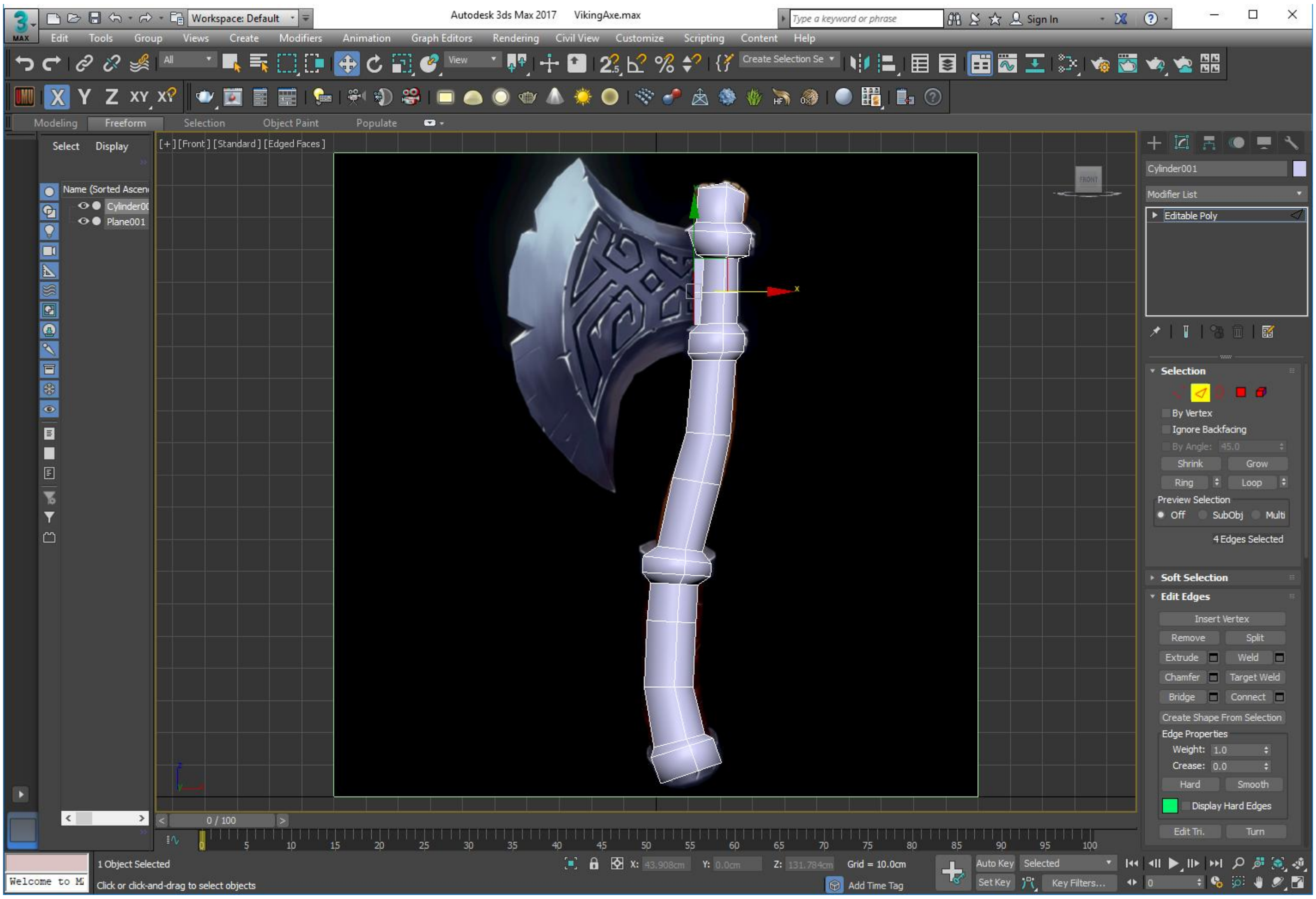
选择线 (Edges)，然后在刚刚开的洞，选这里的边



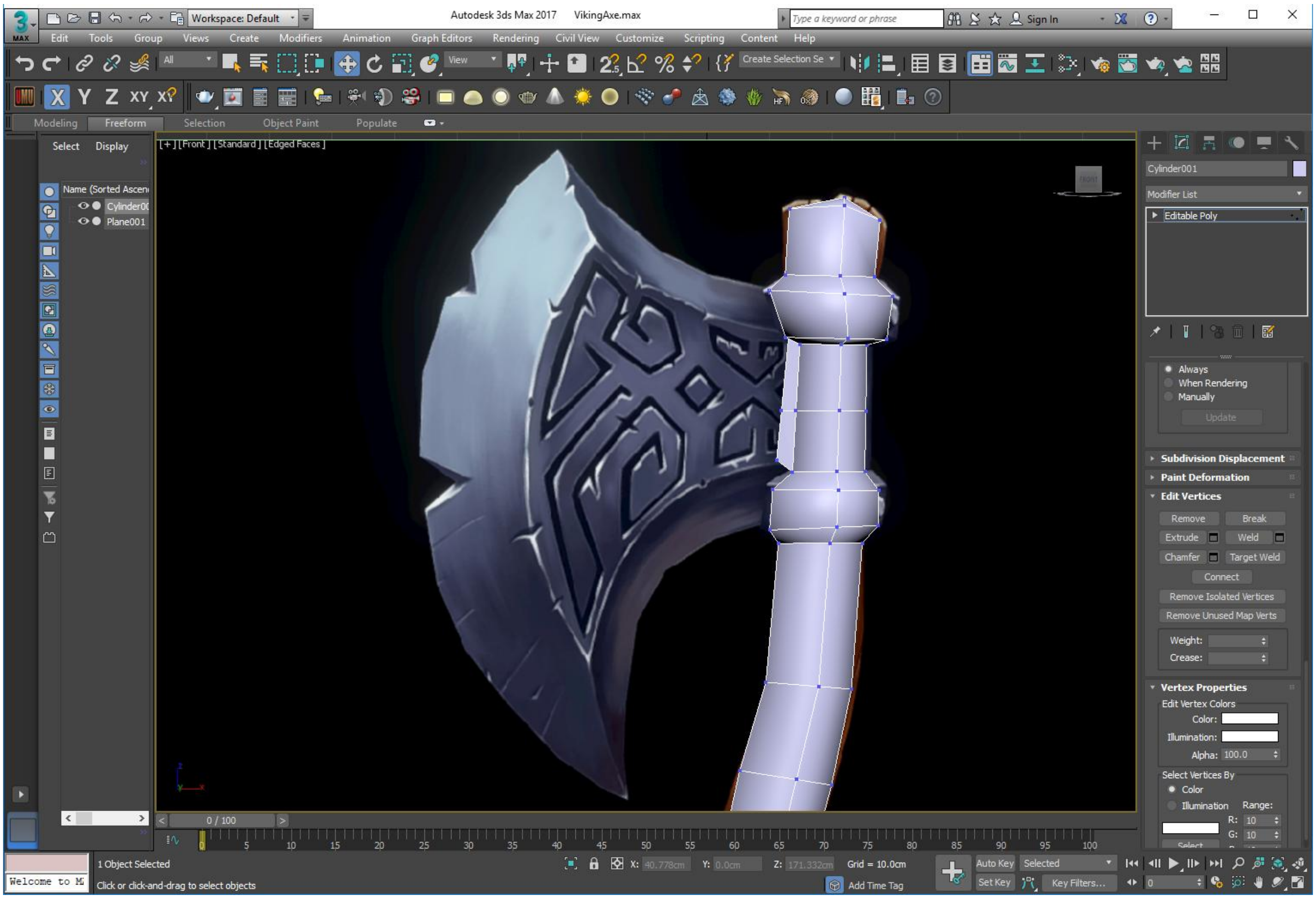
按着 Shift，把边拉出来，就能建立斧头刀面



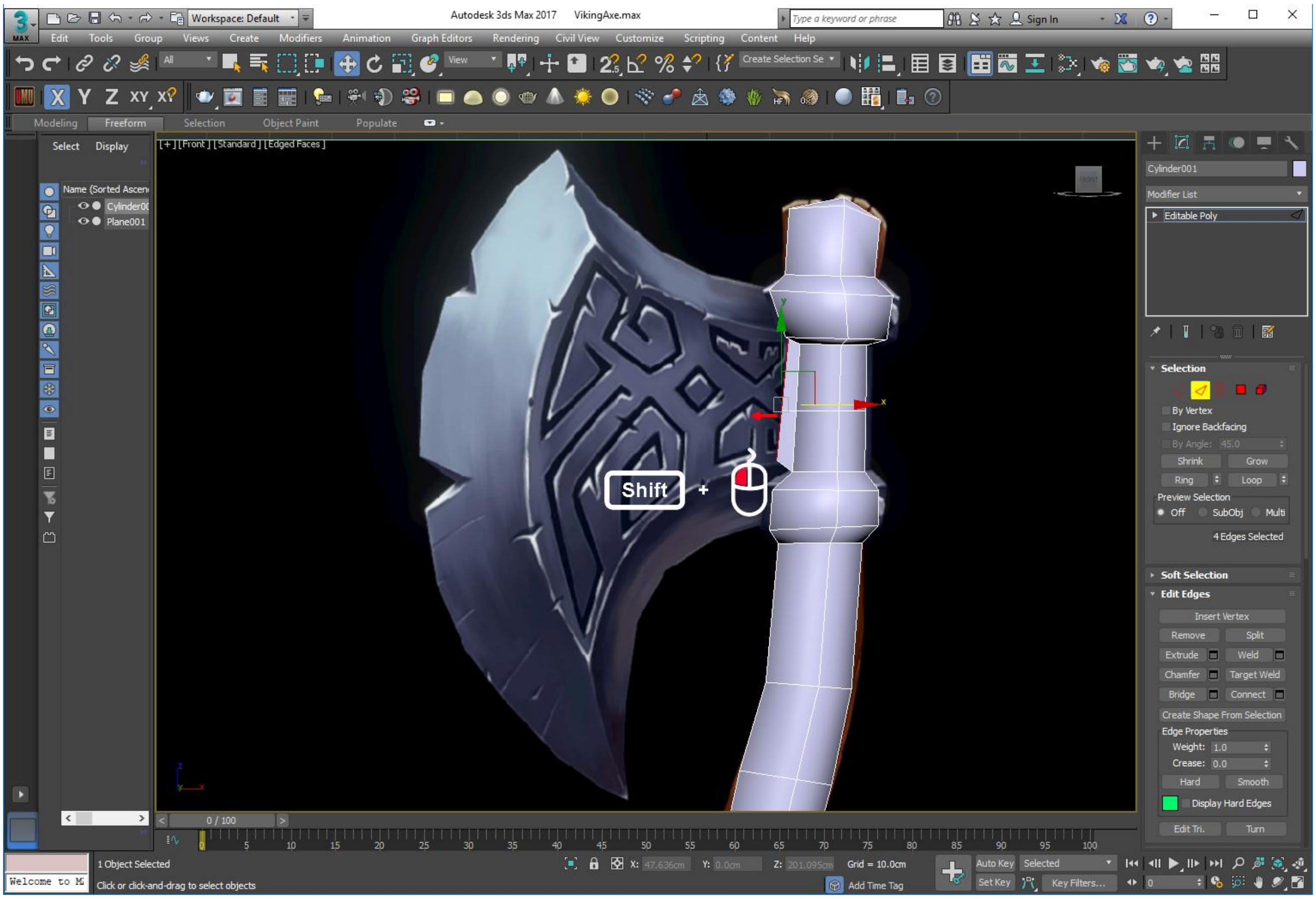
调整线



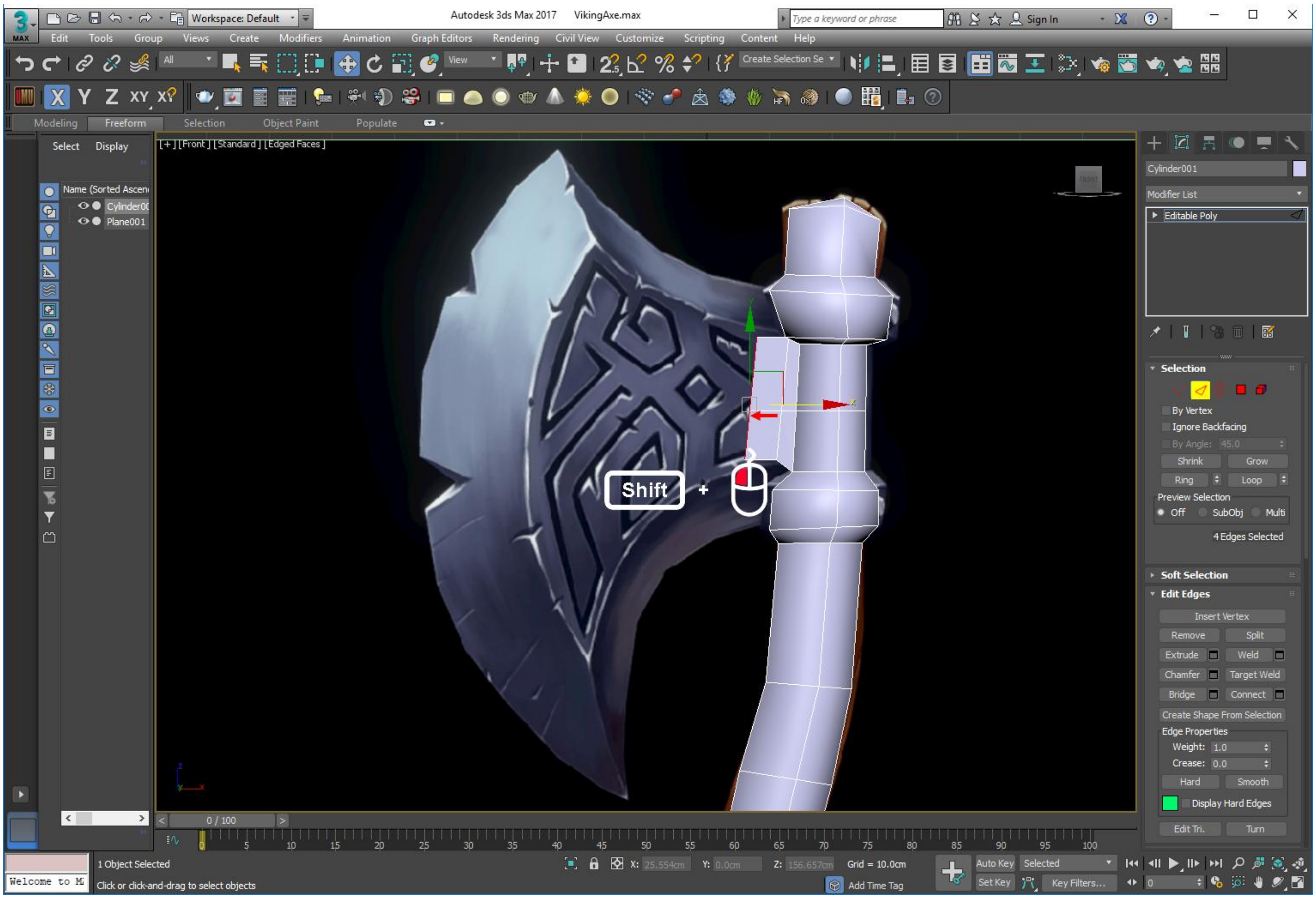
然后用点 (vertex) 调整



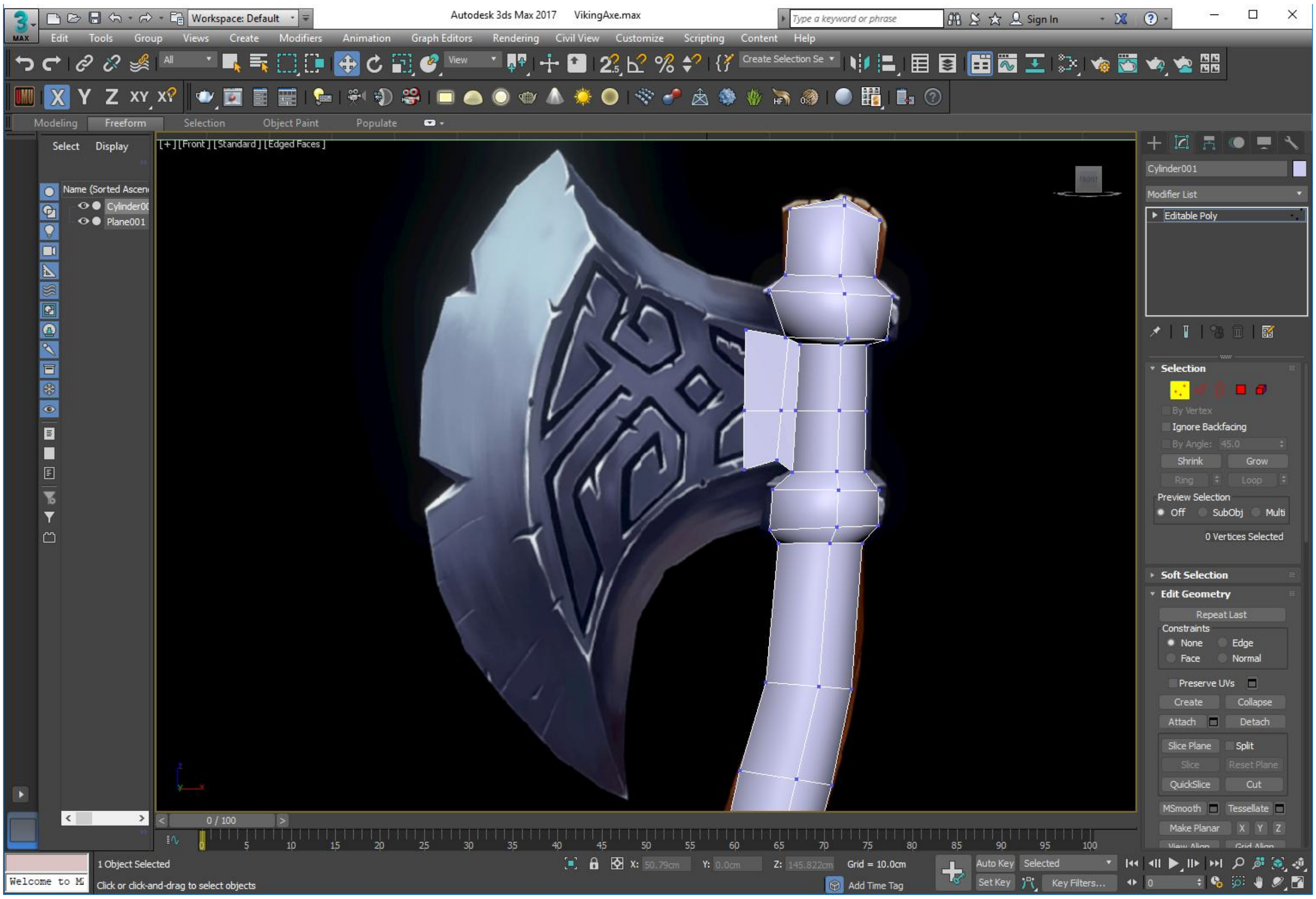
重复同样的步骤，选线(Edges)，按着 Shift 然后把线往左拉



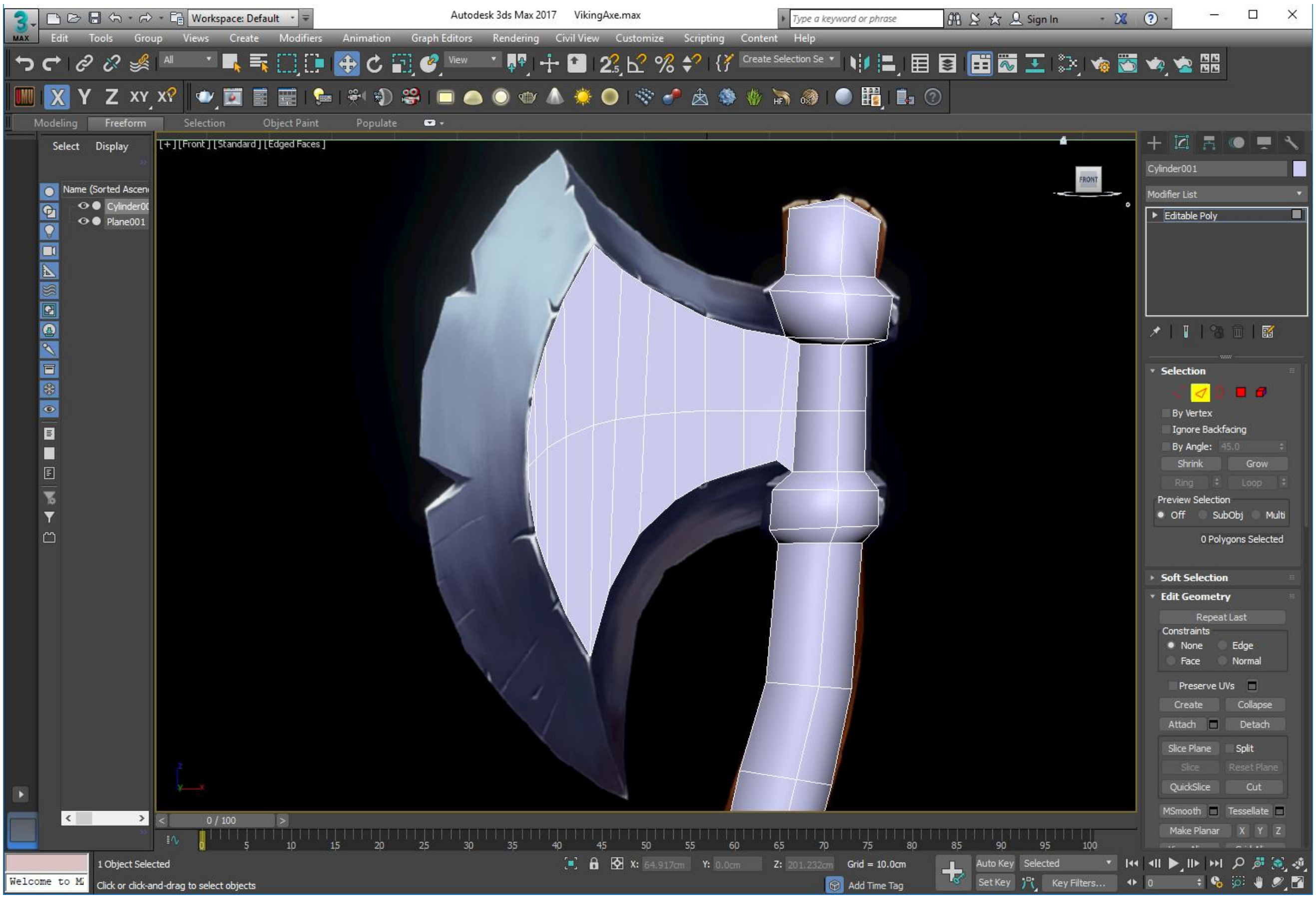
按 Shift 把 线往左拉



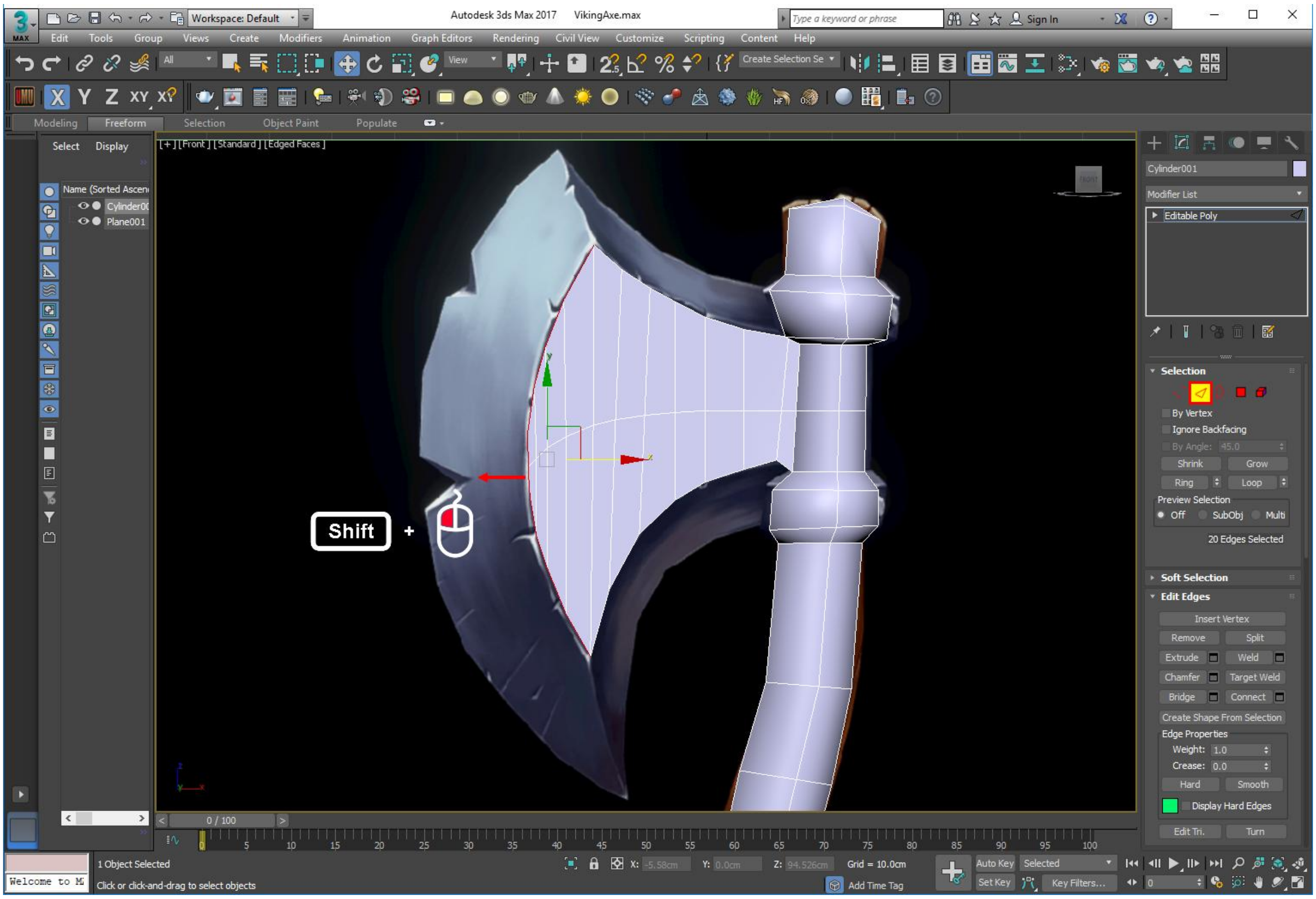
用点 (vertex) 调整



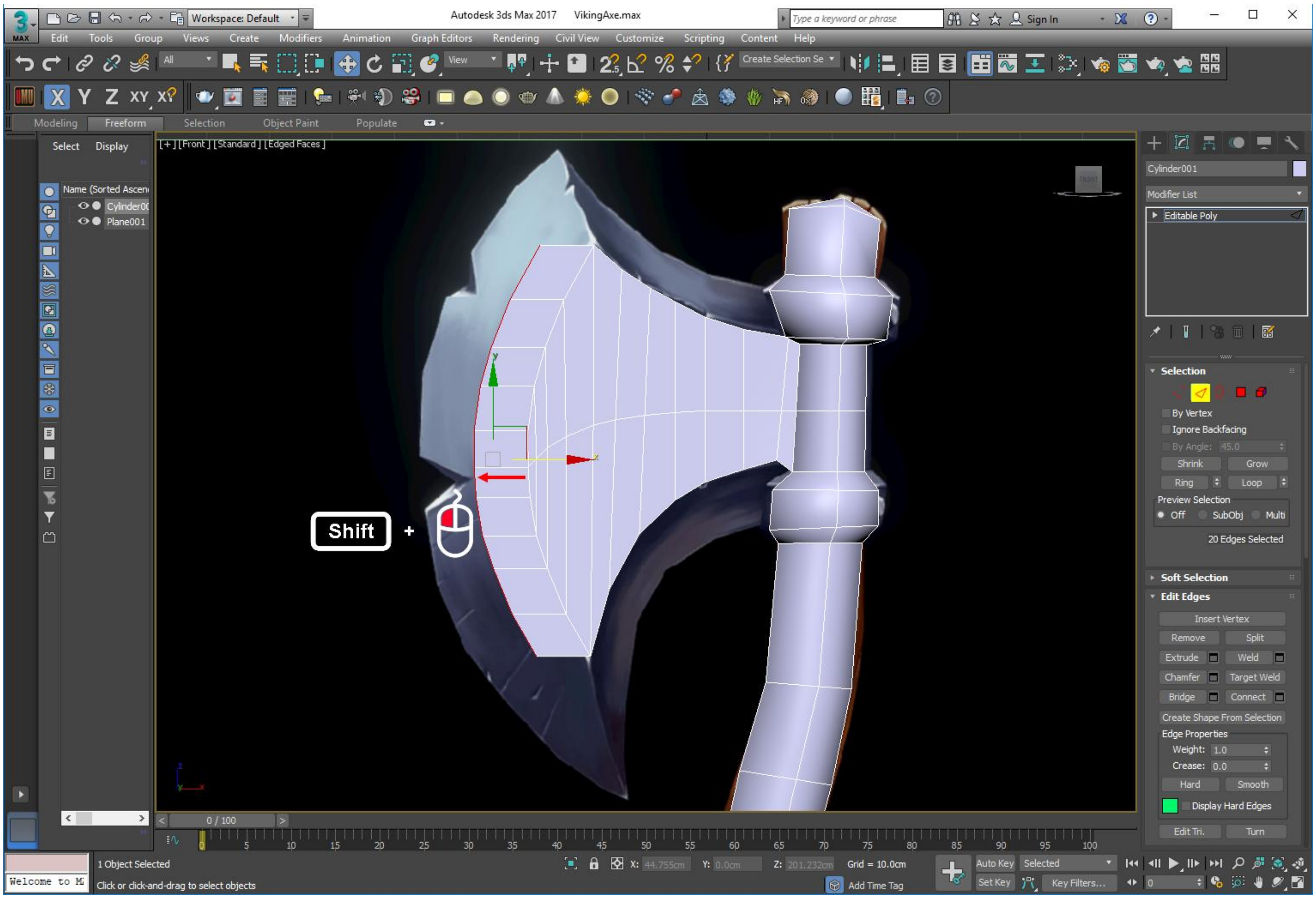
一直重复同样的步骤，来完成斧头的刀面



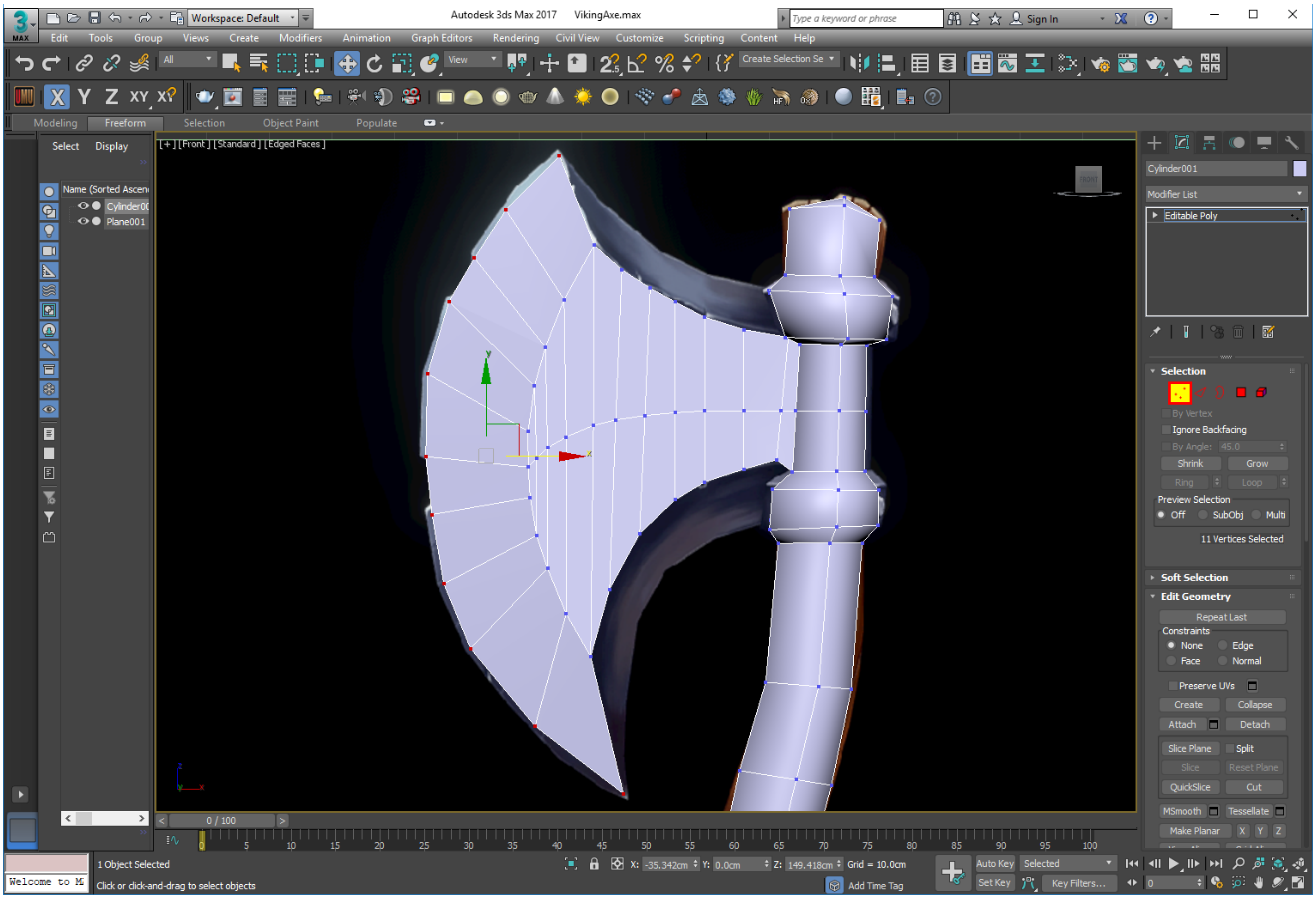
选择刀面的边，然后按着 Shift，往左拉出来



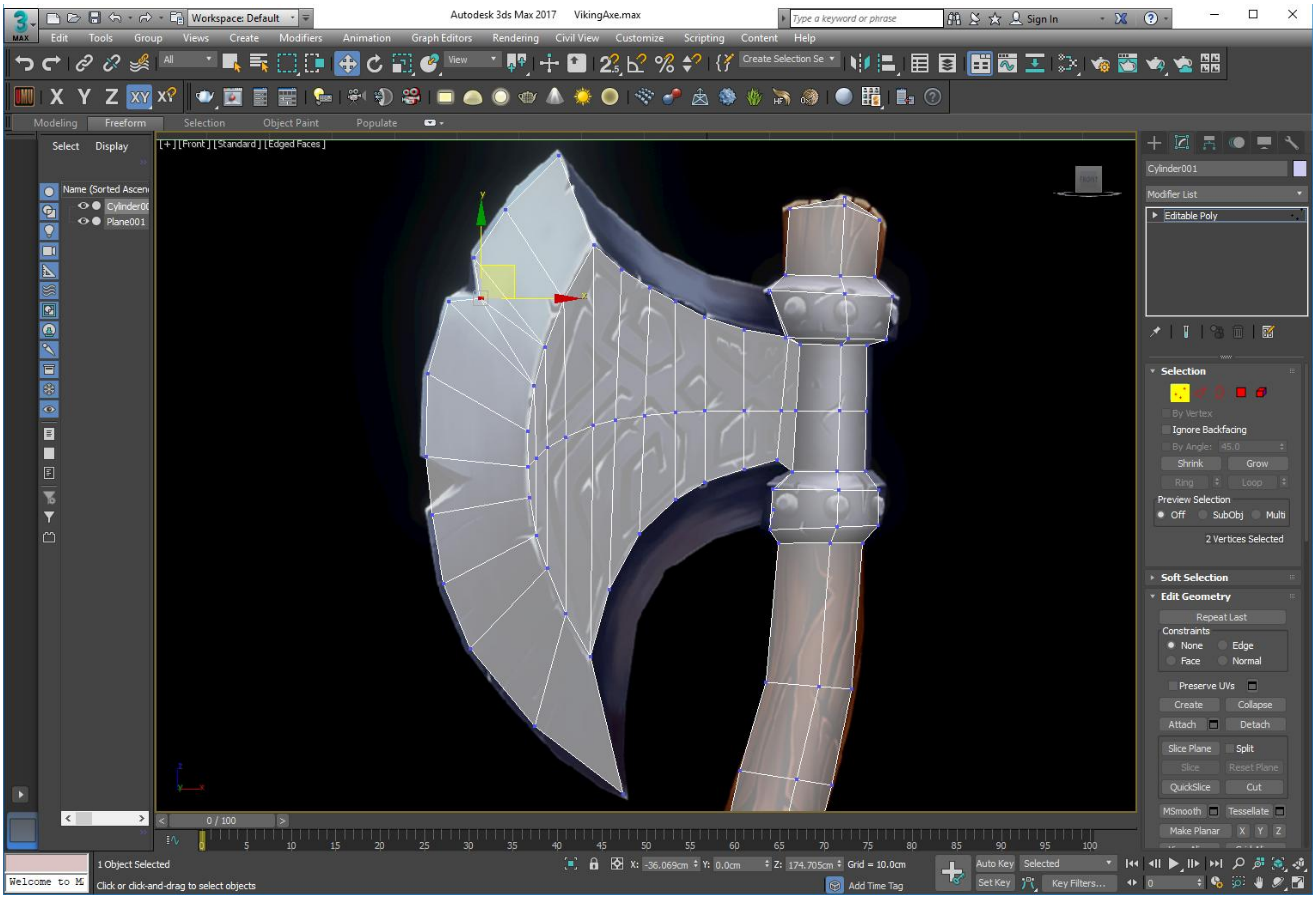
把斧头的刀边拉出来之后



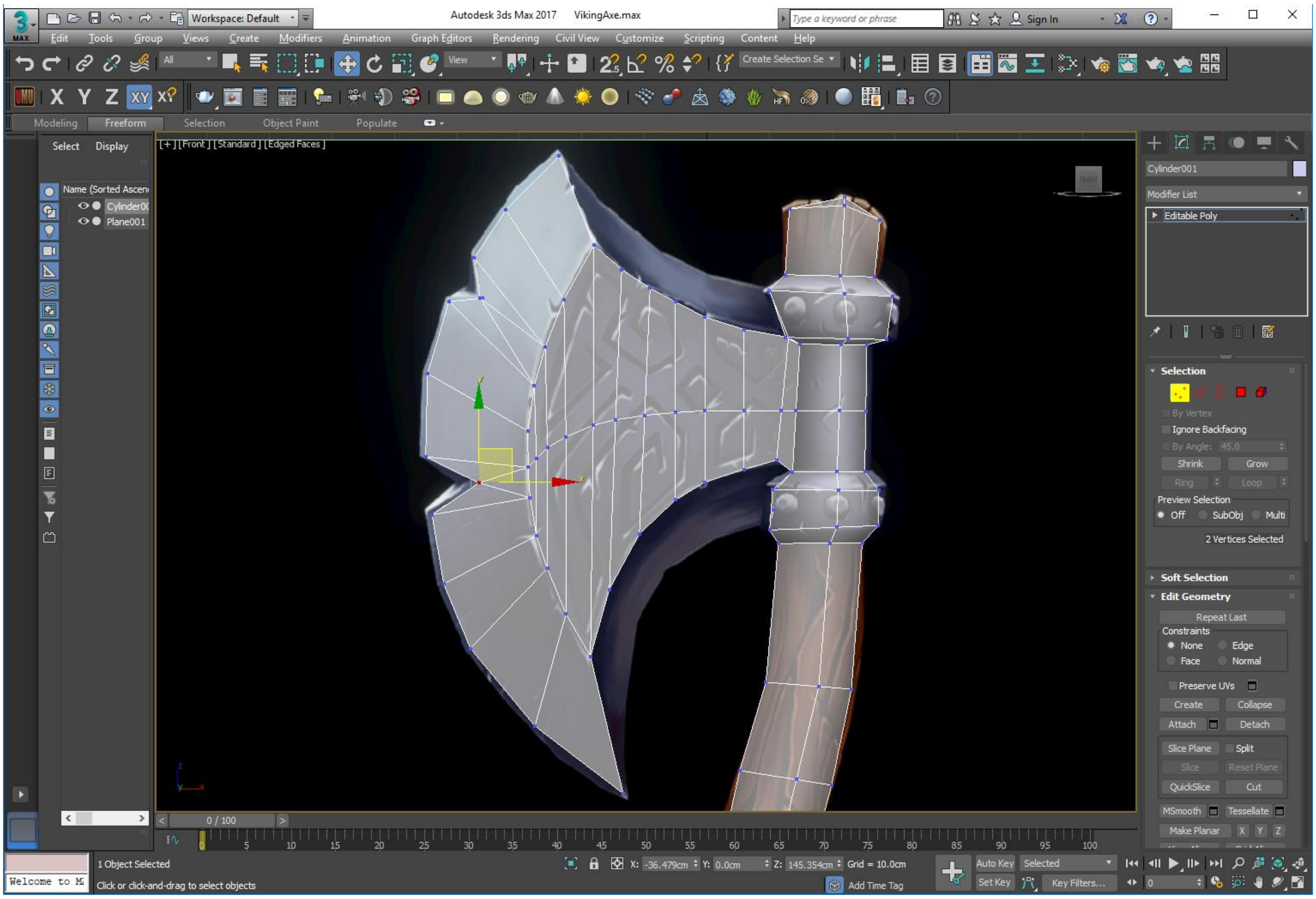
跟着斧头图片，用点 (vertex) 来调整刀边



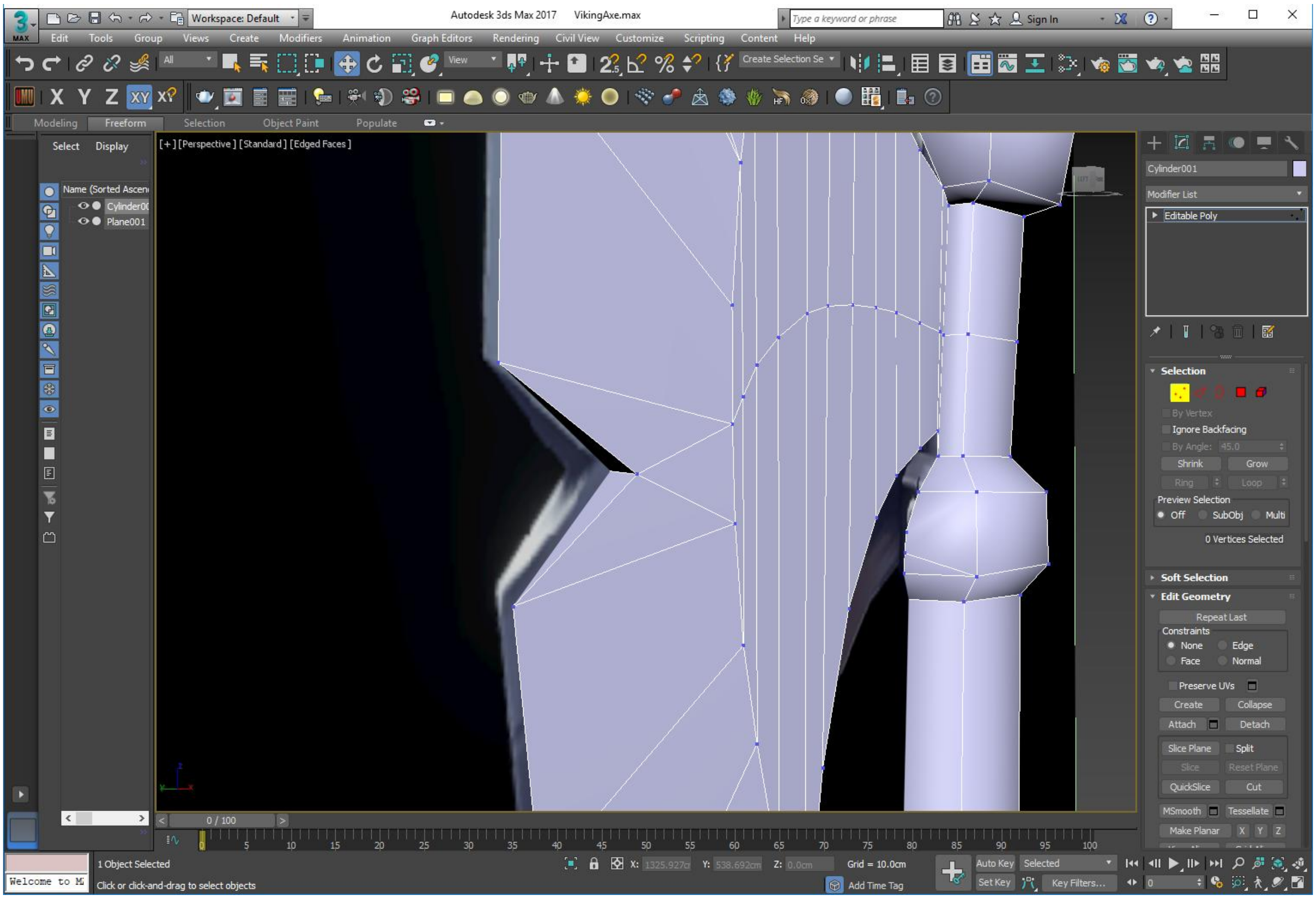
添加点 (vertex) 然后调整，让它形成钝口



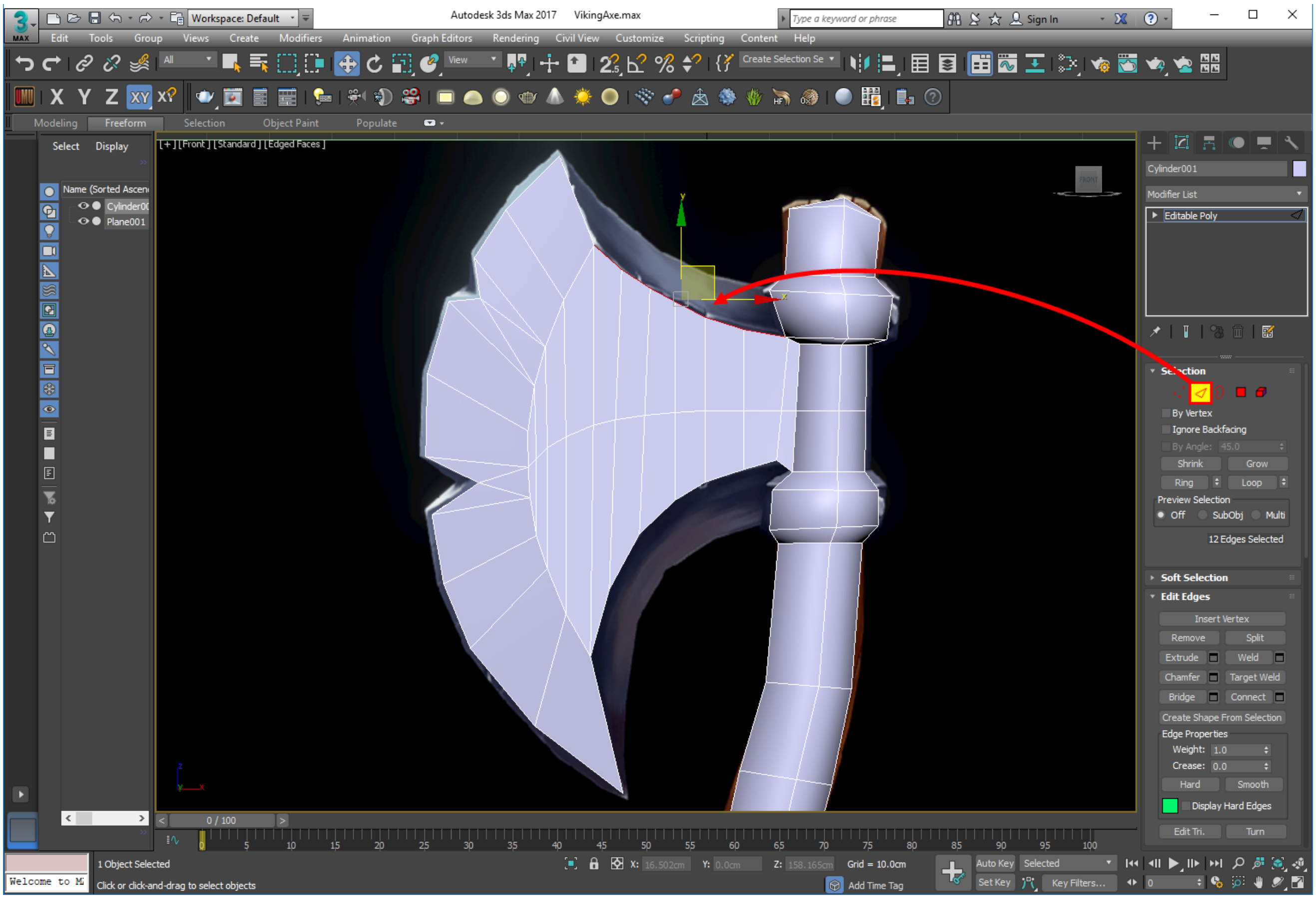
跟着图片，在这里添加点 (vertex) 来形成钝口



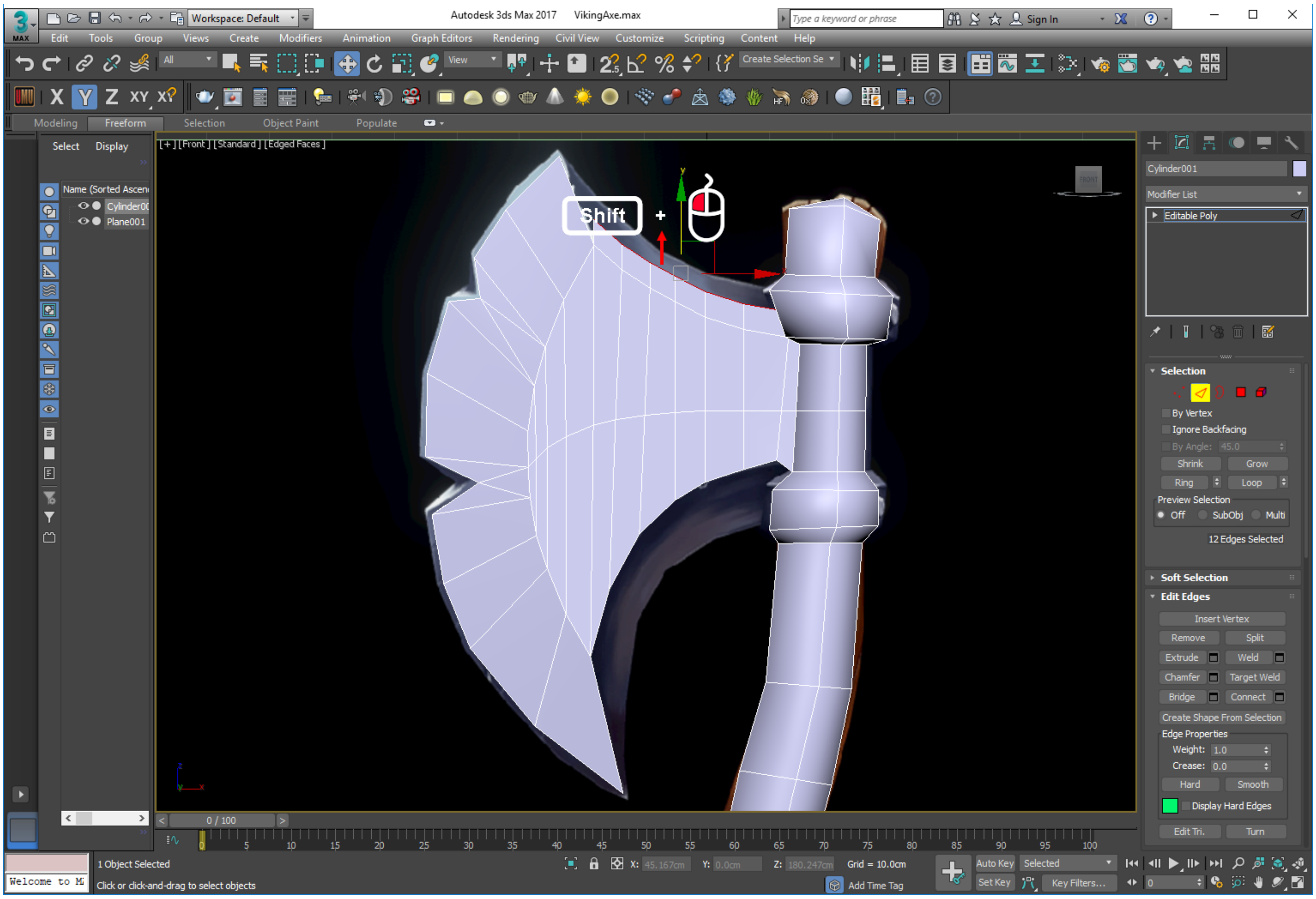
完成了后



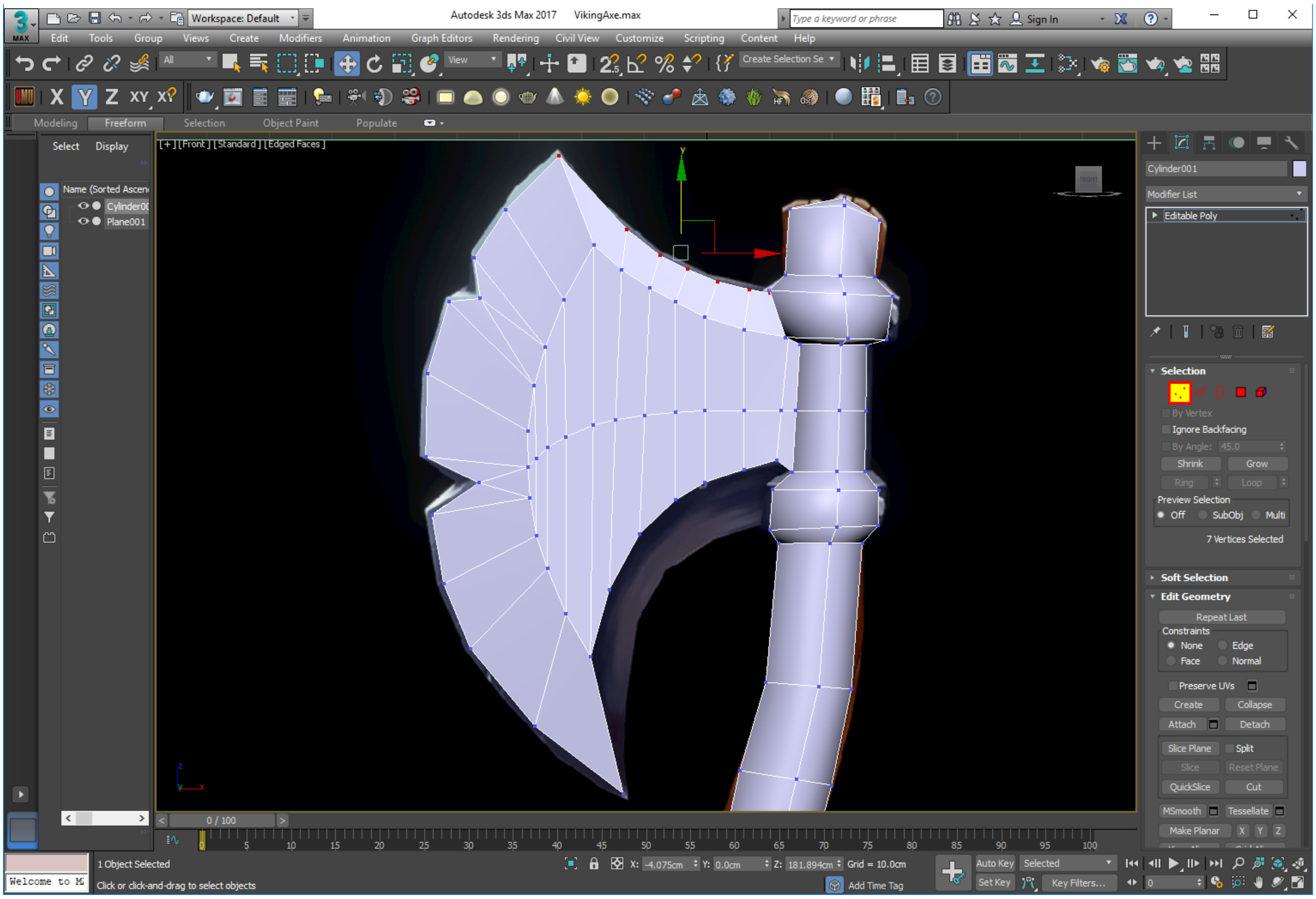
选择线 (Edges) 然后选择上面的边



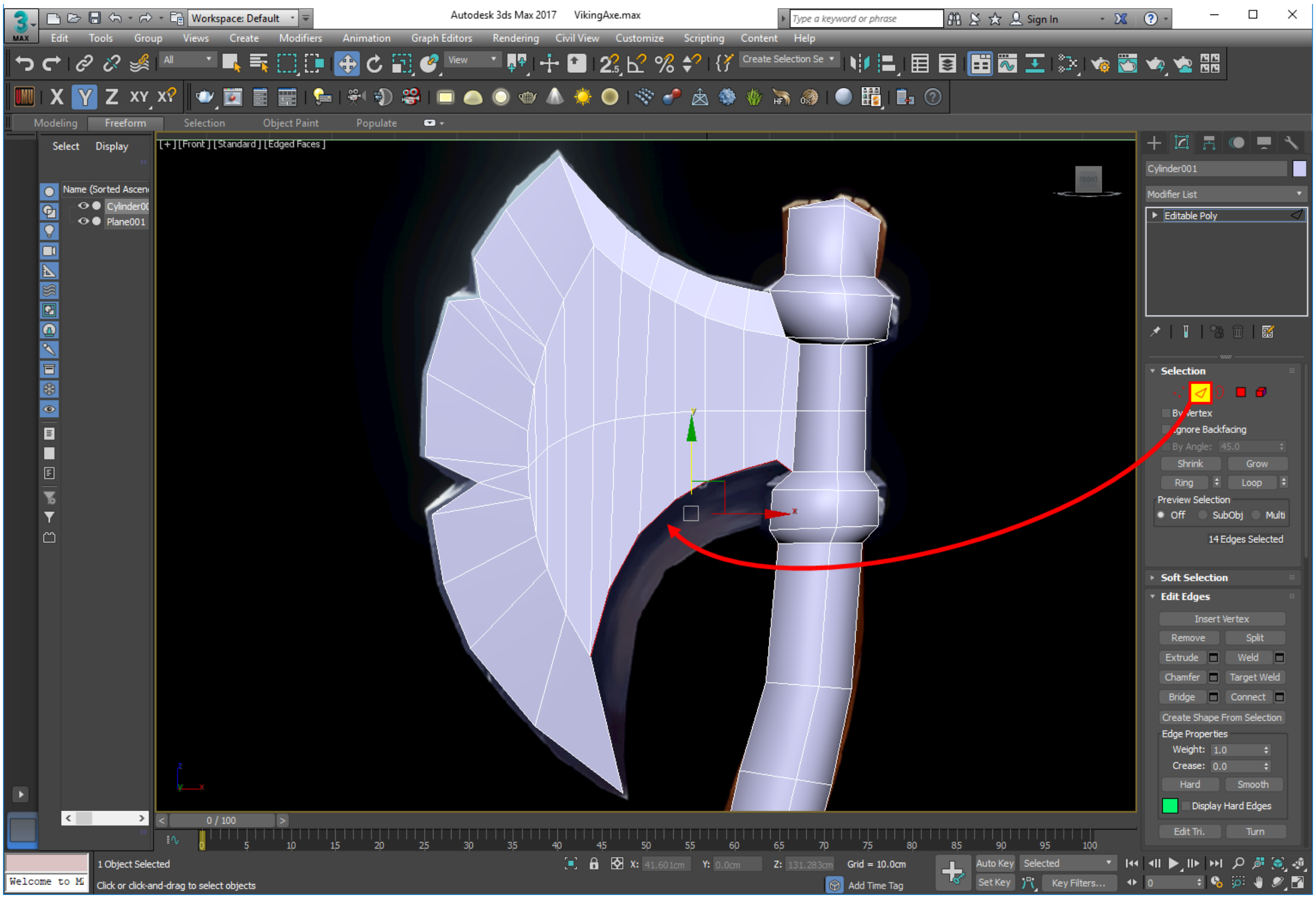
按着 Shift 然后往上拉



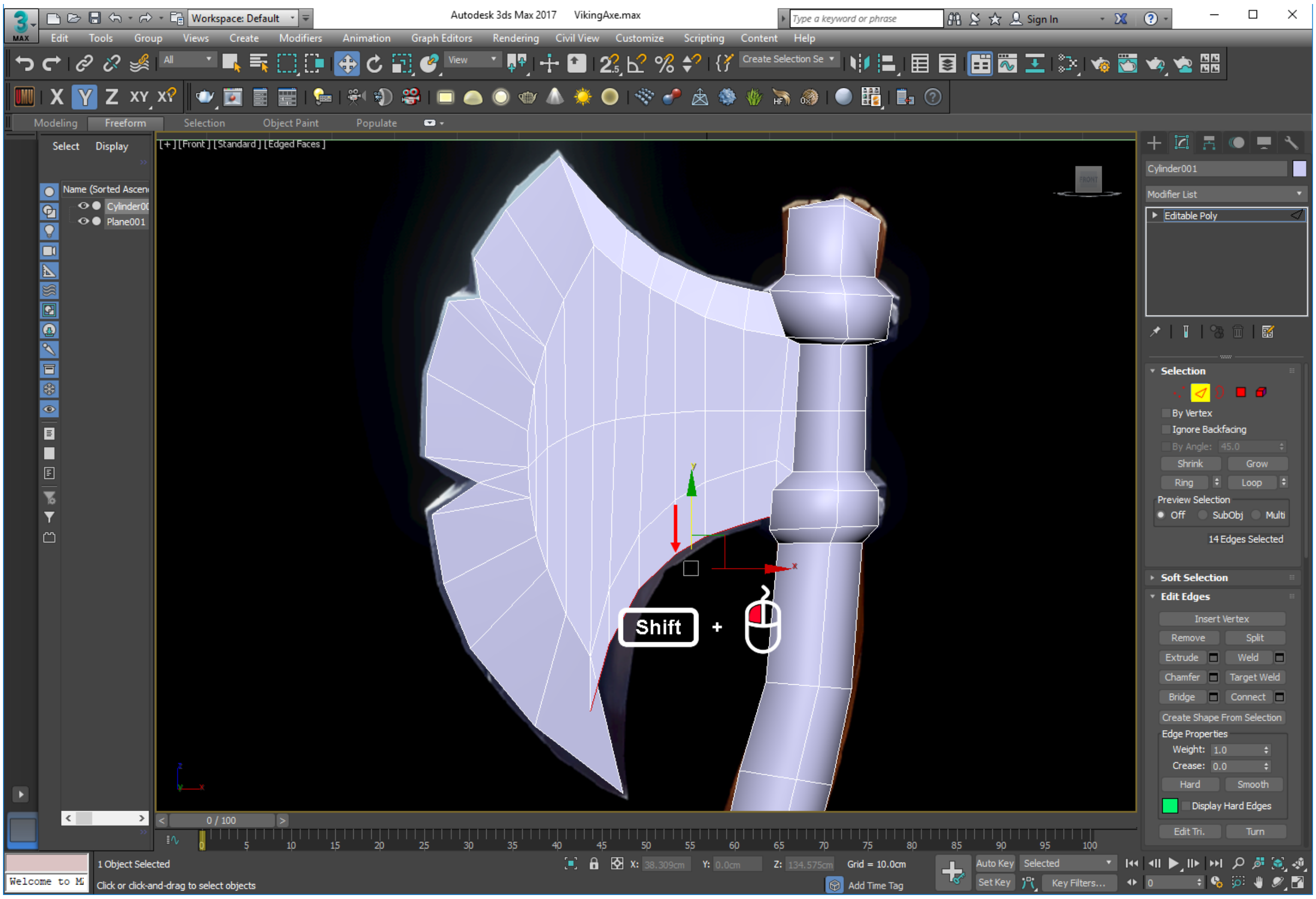
调整点 (vertex)



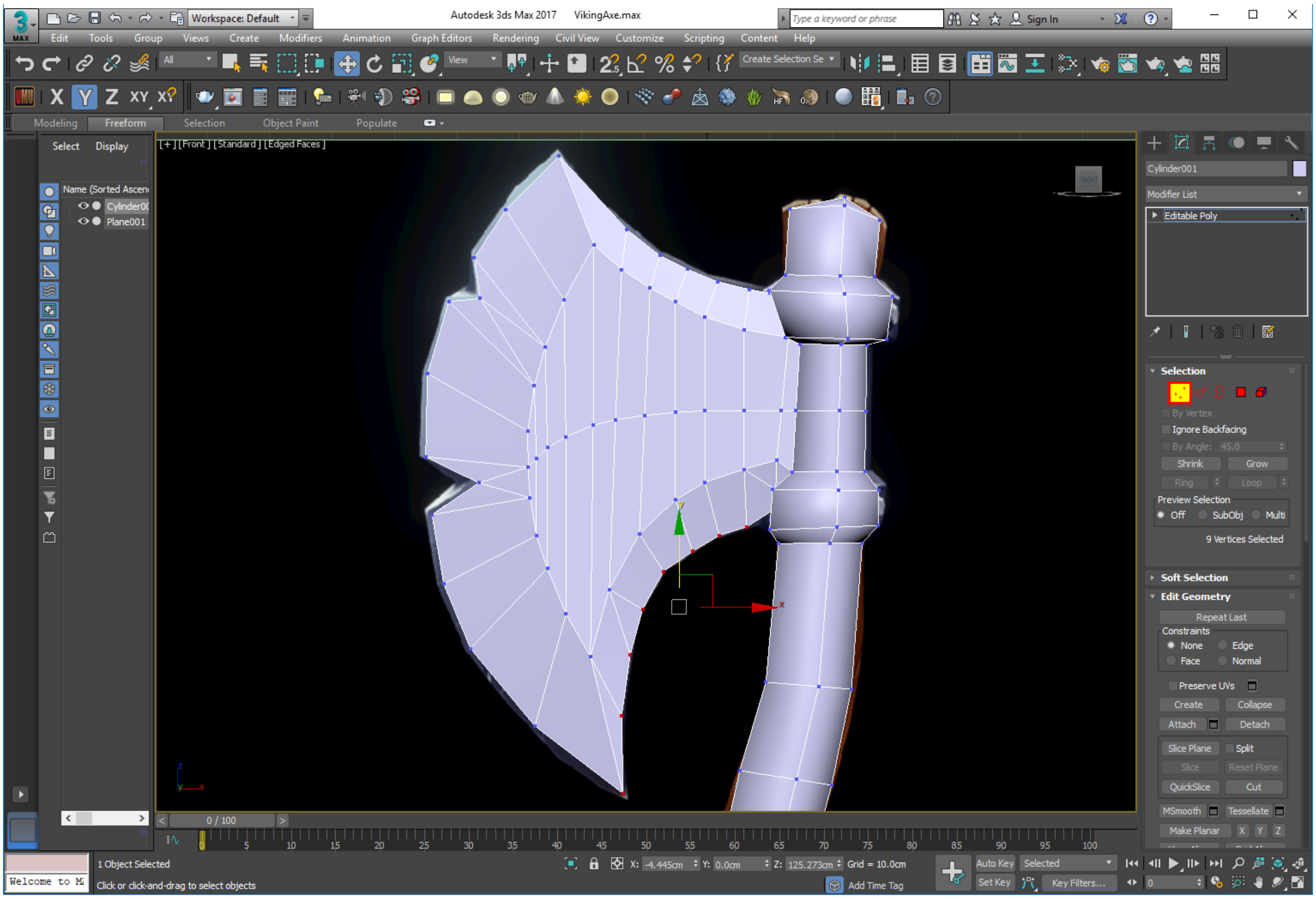
选择线 (Edges) 然后选下面的边



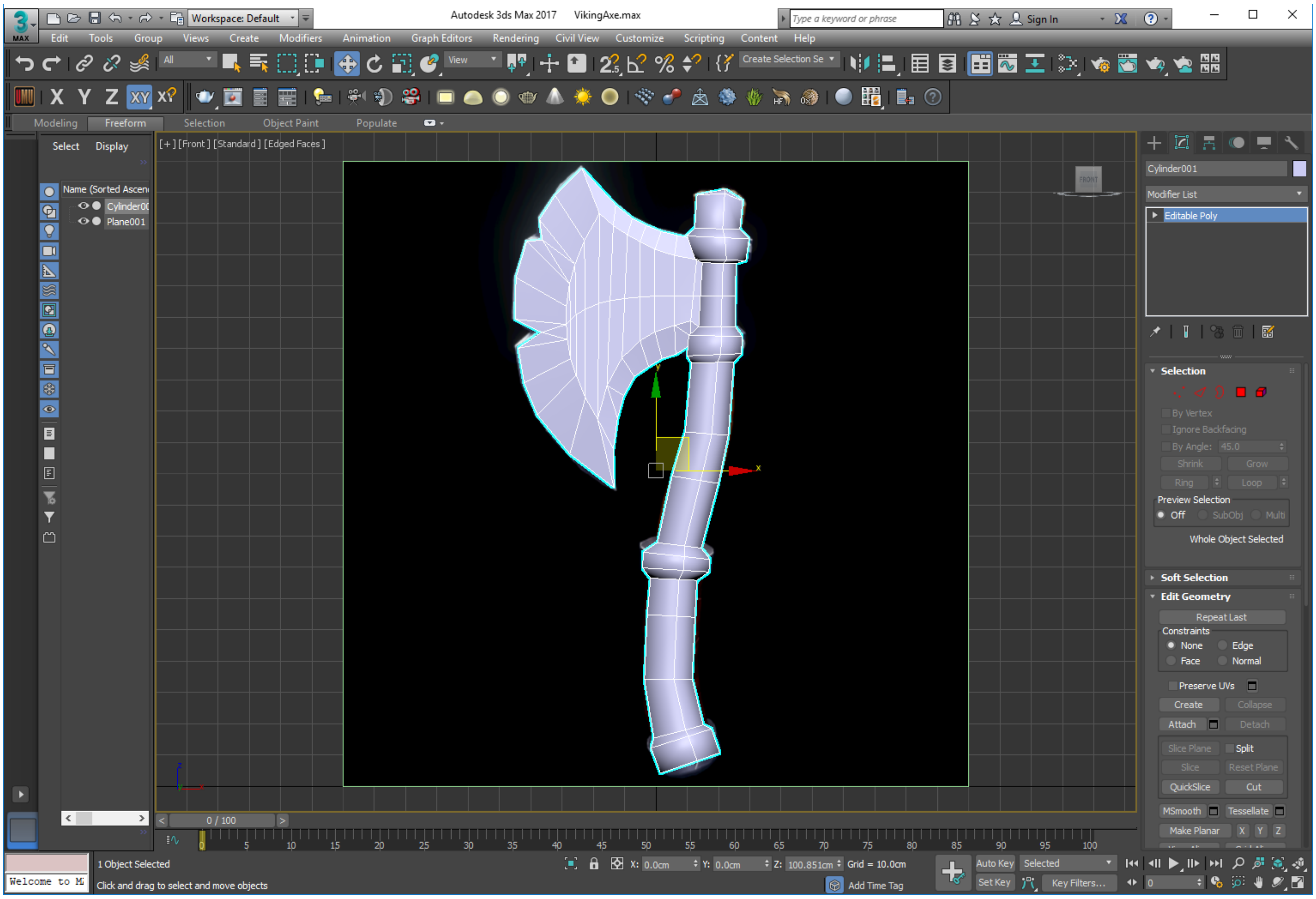
按着 Shift 然后往下拉



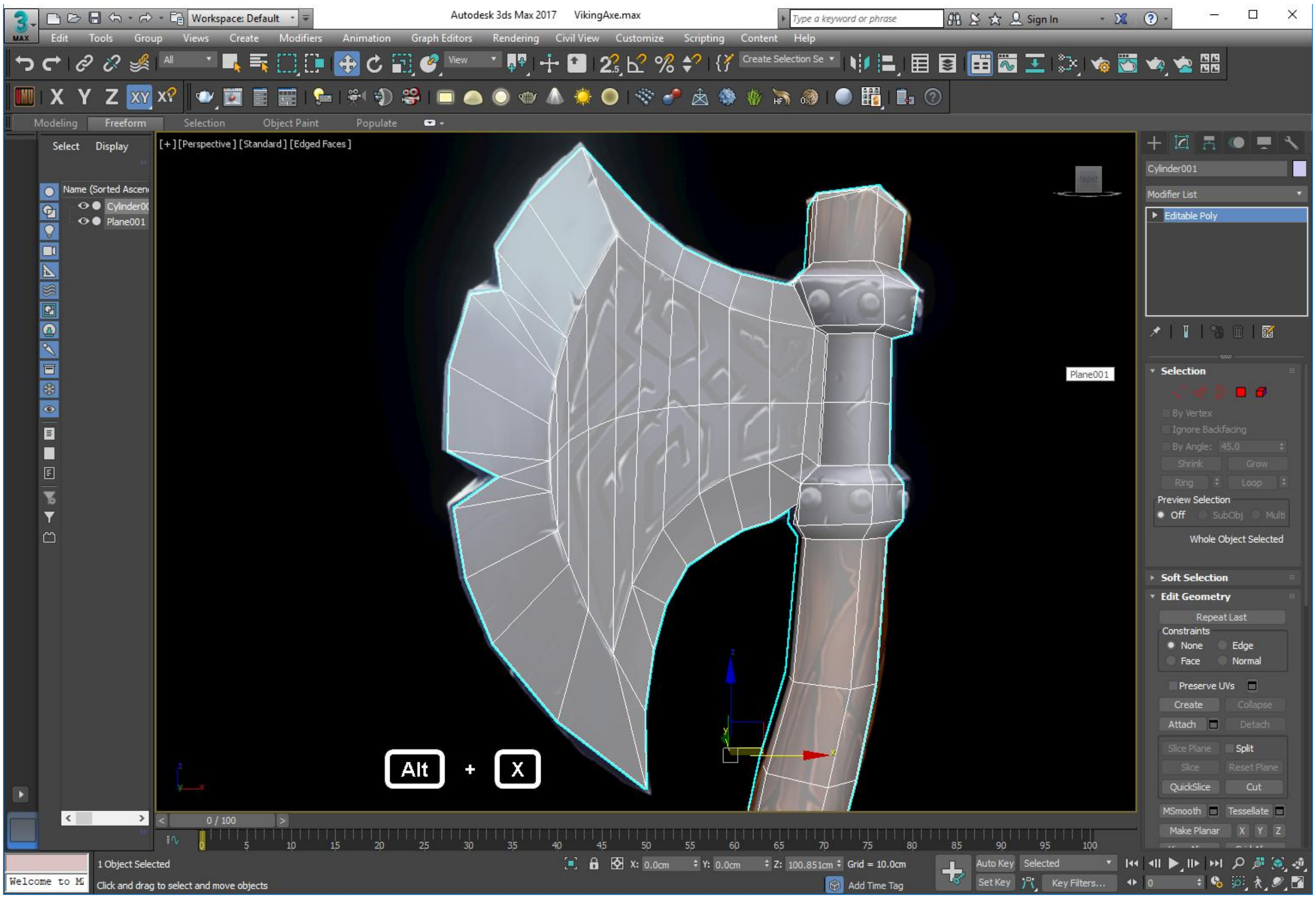
调整点 (vertex)



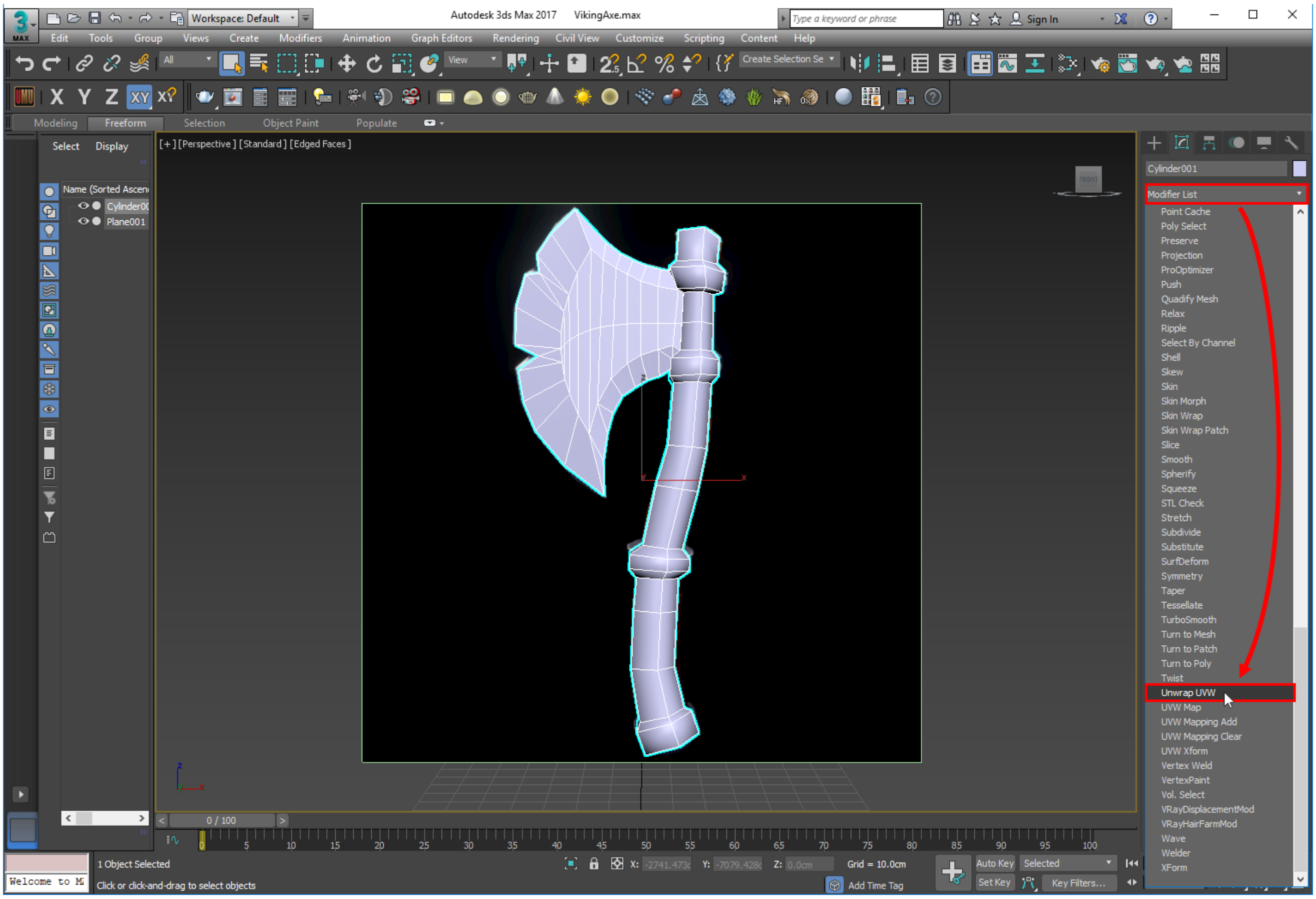
完成了，这就是低模型斧头



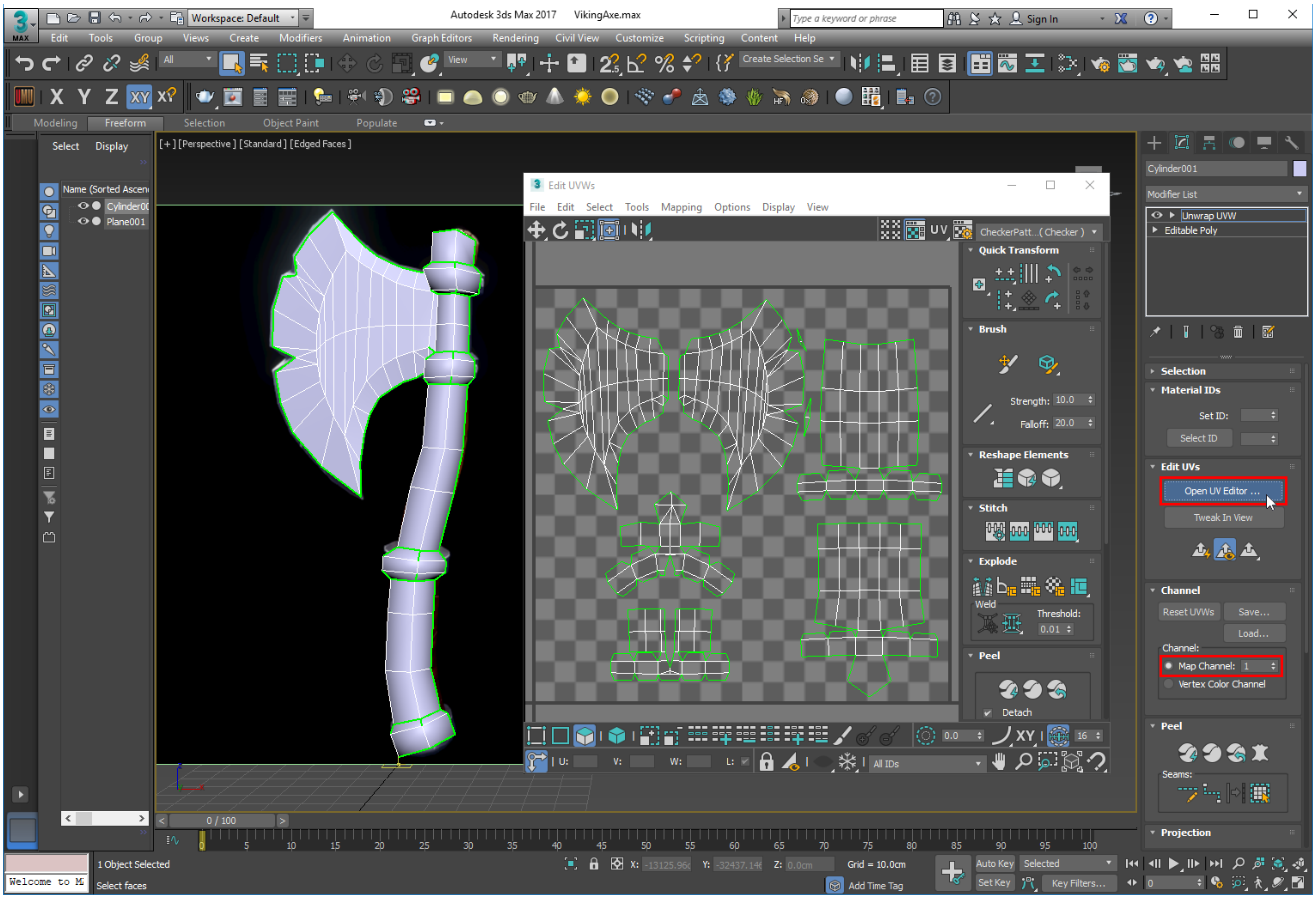
按 Alt + X 把斧头变透明，来检查斧头是否有没有问题



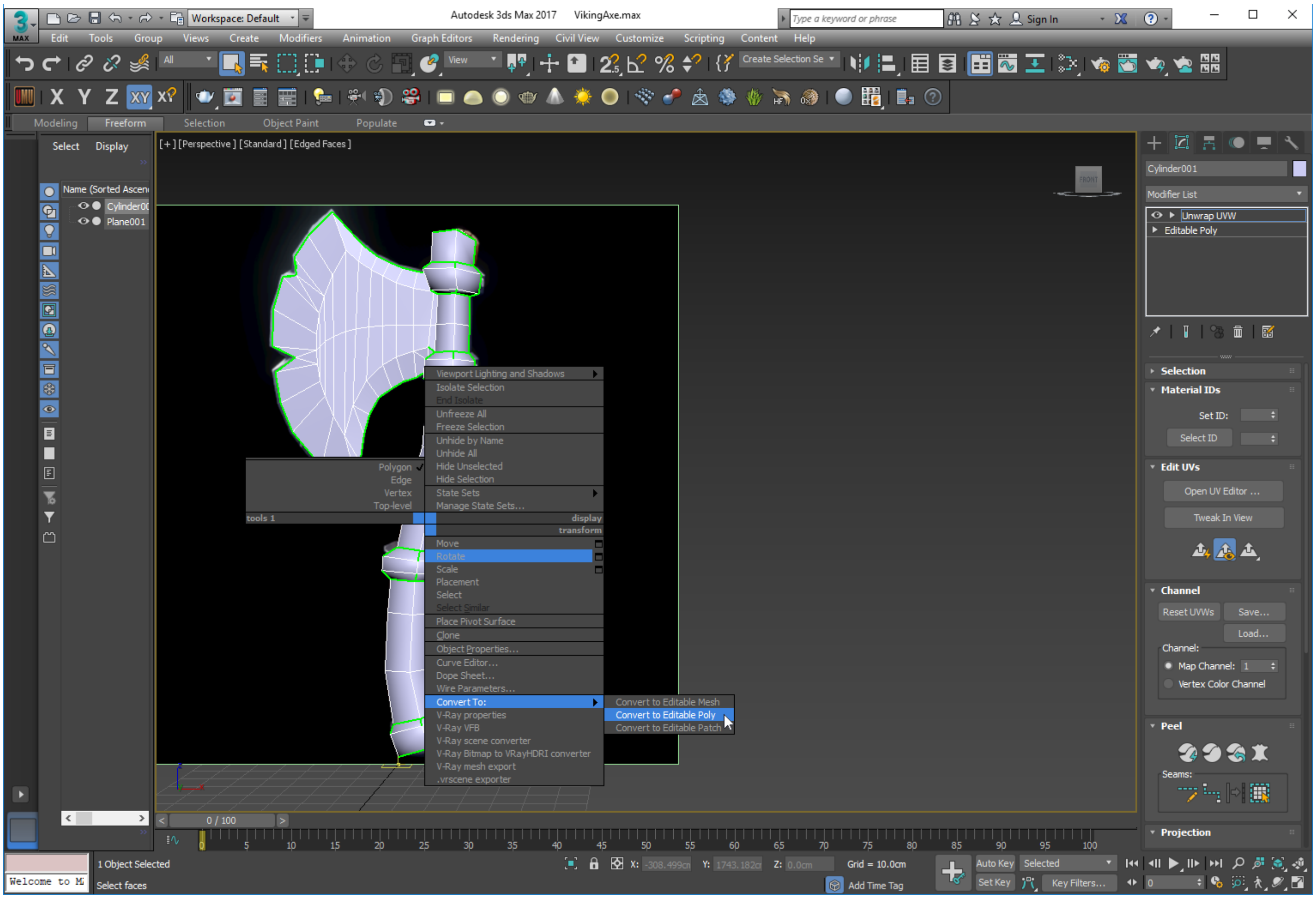
确定没有问题后，我们来展开 UV，Modifier List → Unwrap UVW



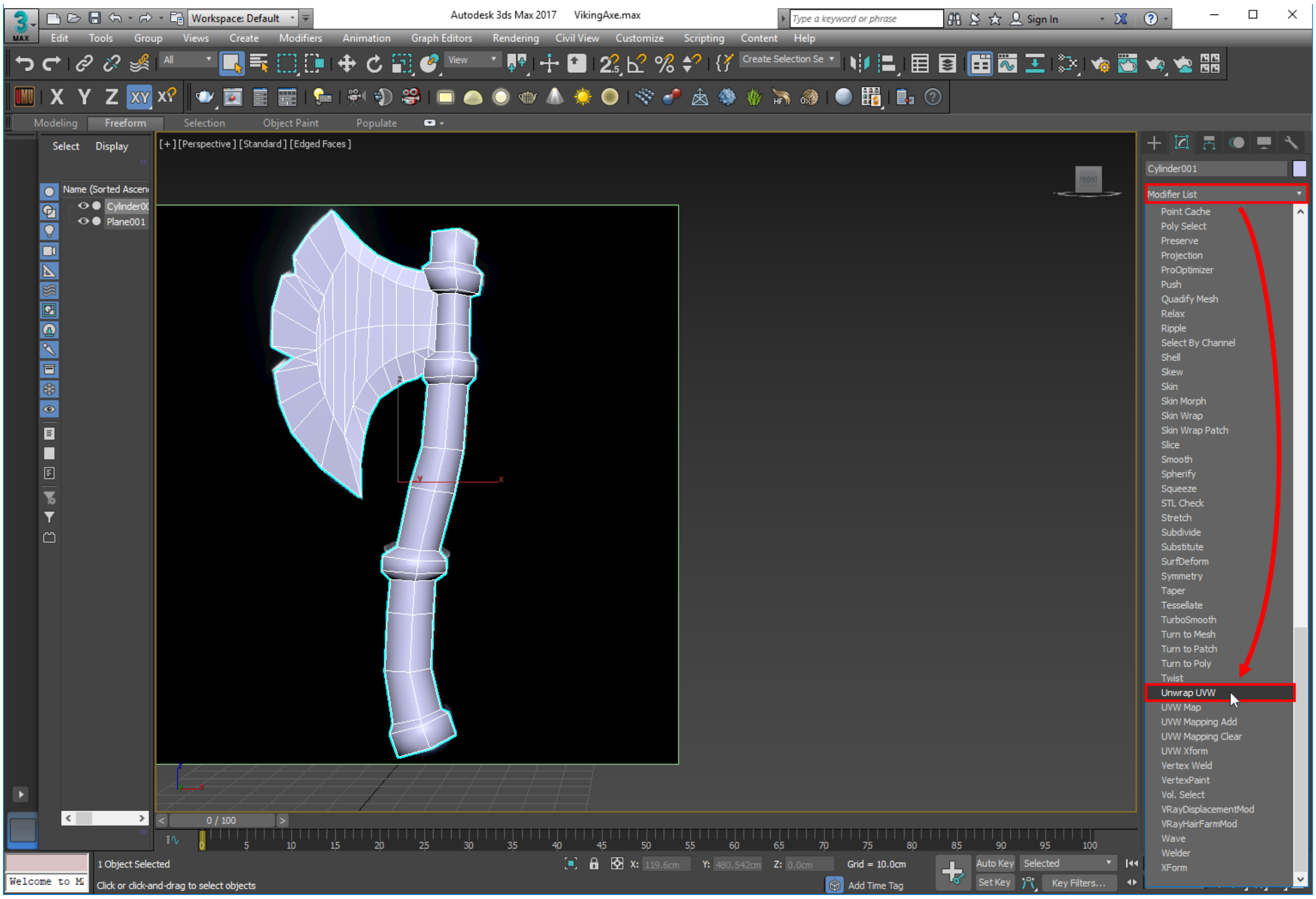
按下 Open UV Editor，然后展开 uv (这是已经展开斧头的 uv 样子)



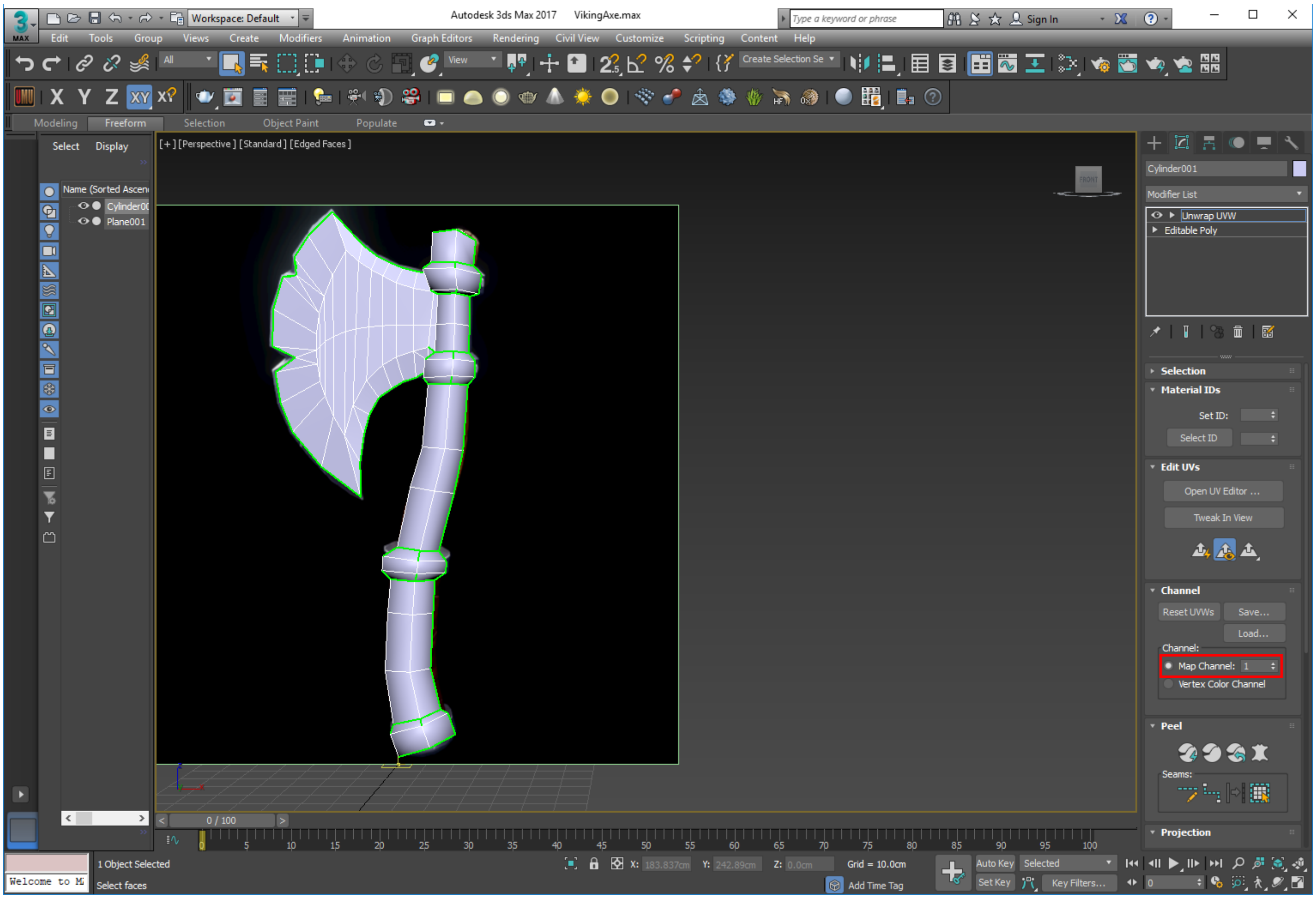
滑鼠右键按 Convert to Editable Poly就能存储 Map Channel 1 (或 UV 1)



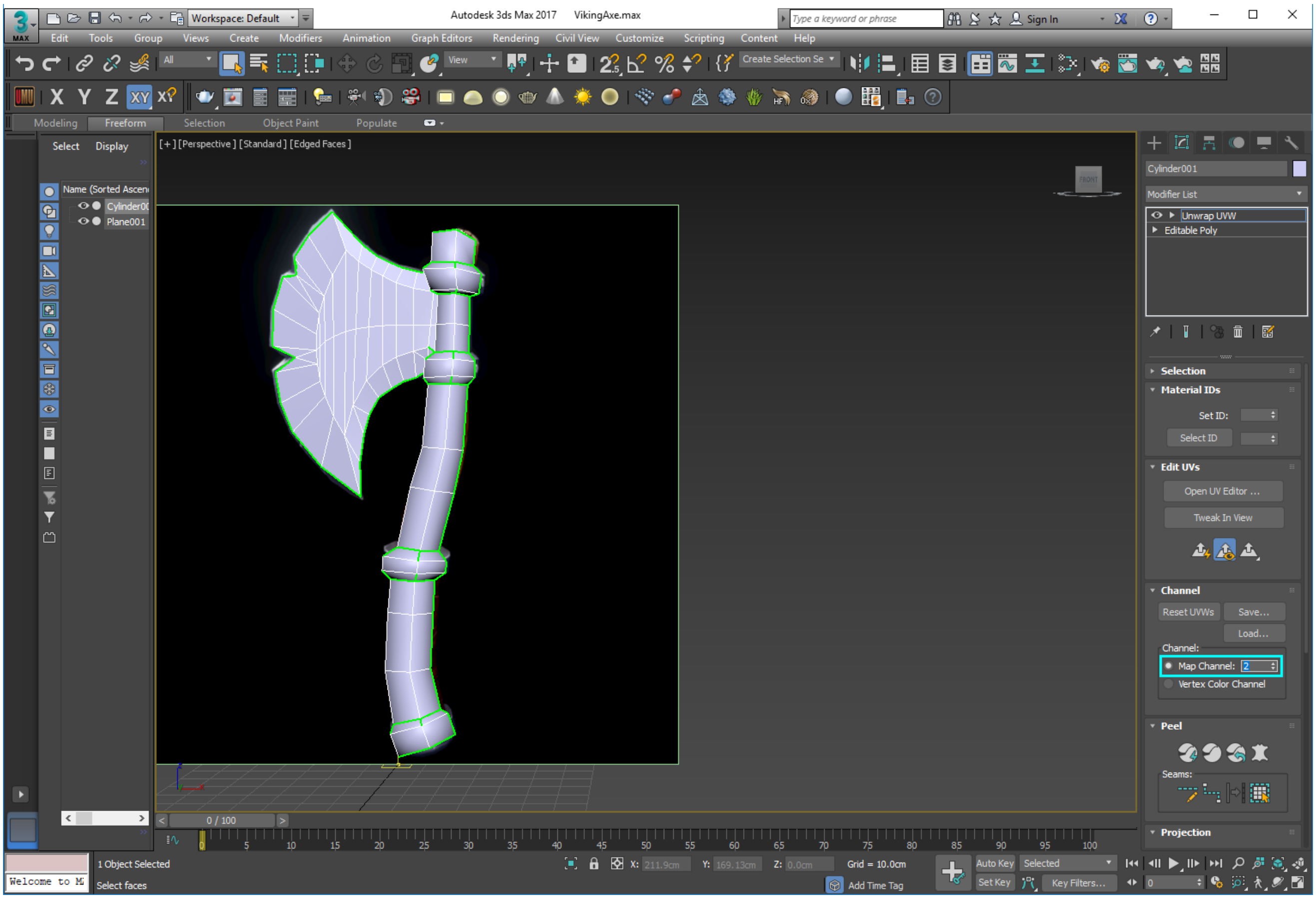
我们再来多一次 Modifier List → Unwrap UVW (来弄 Map Channel 2)



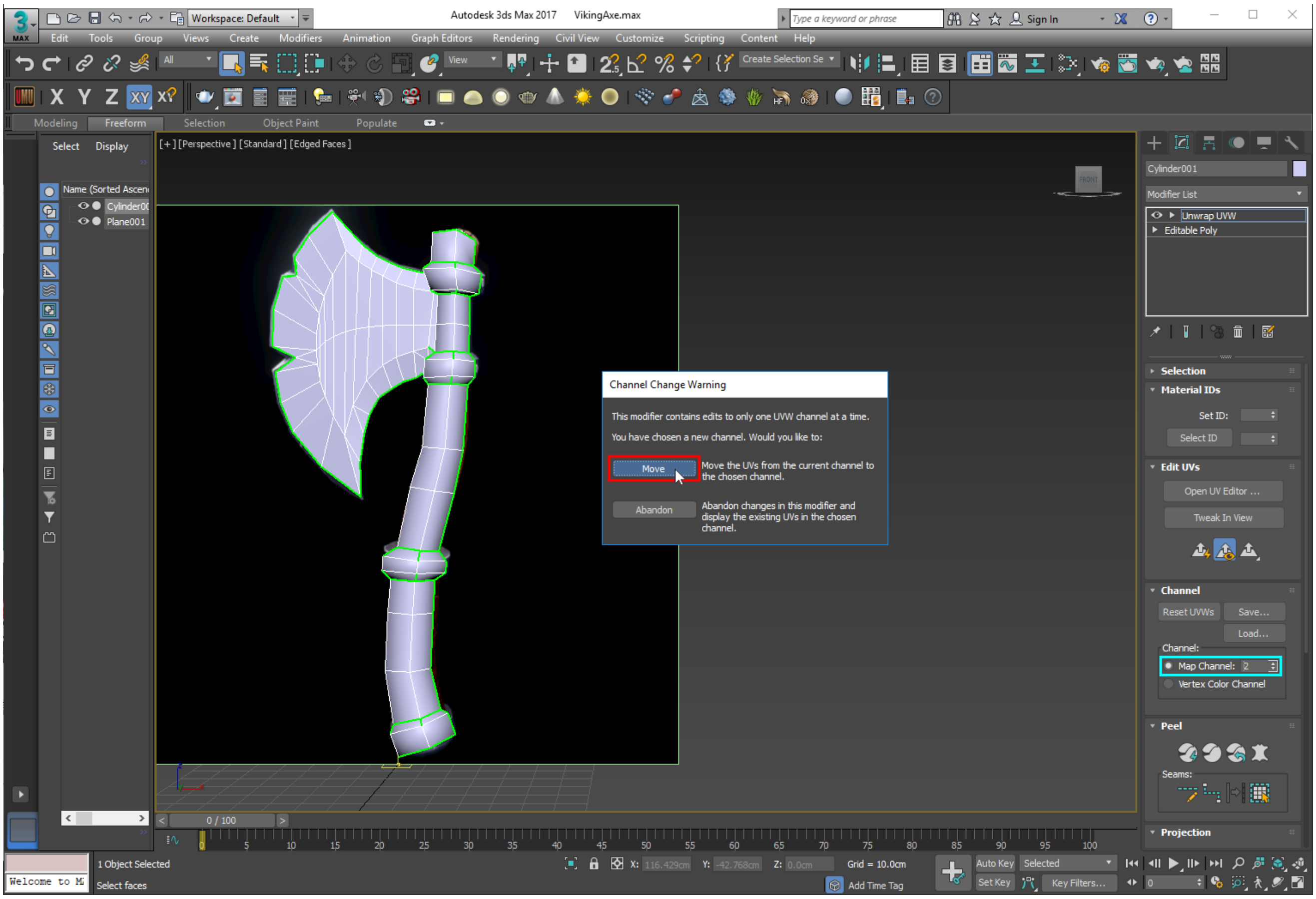
在右边修改 Map Channel 1 → 2



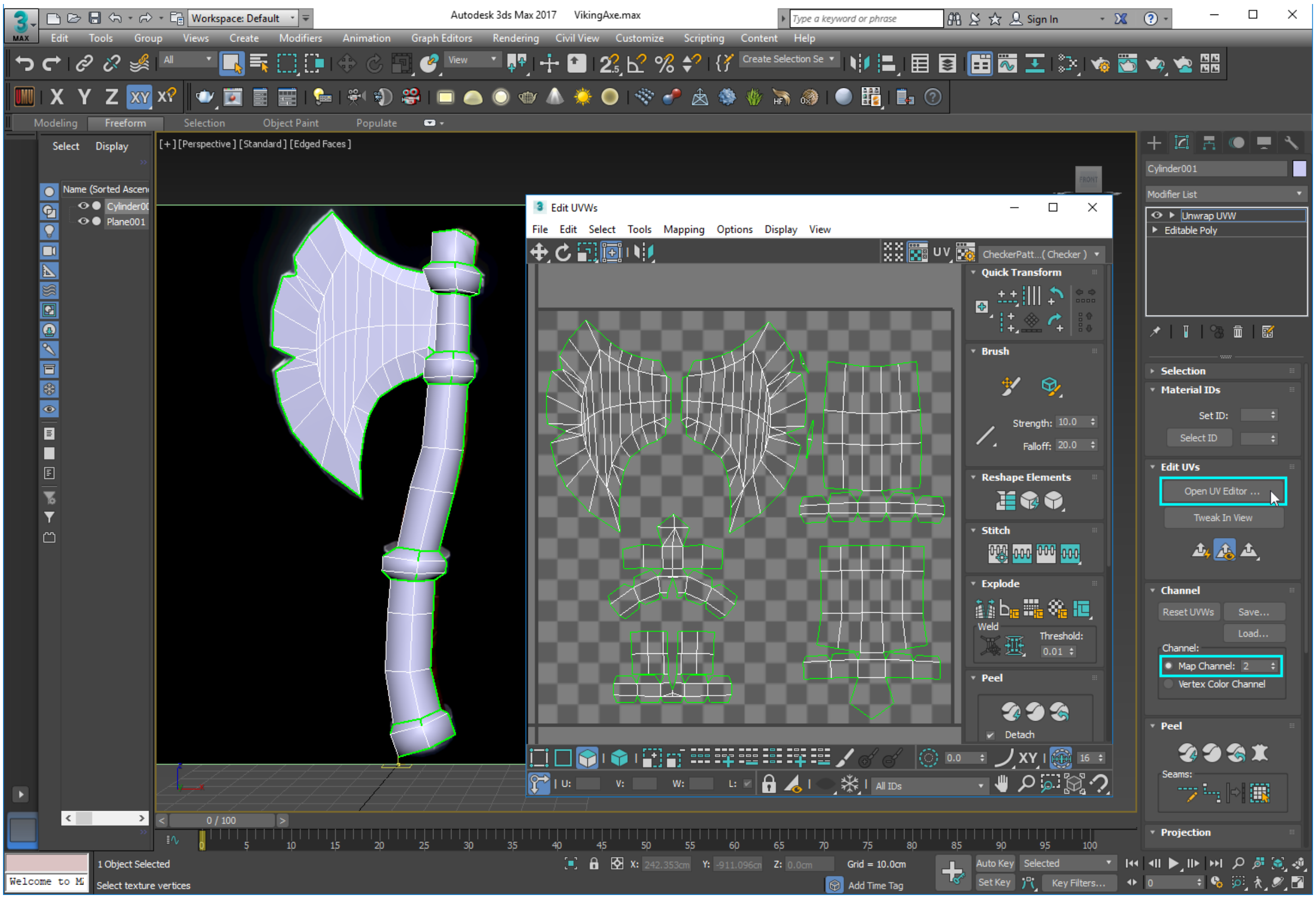
Map Channel 1 → 2



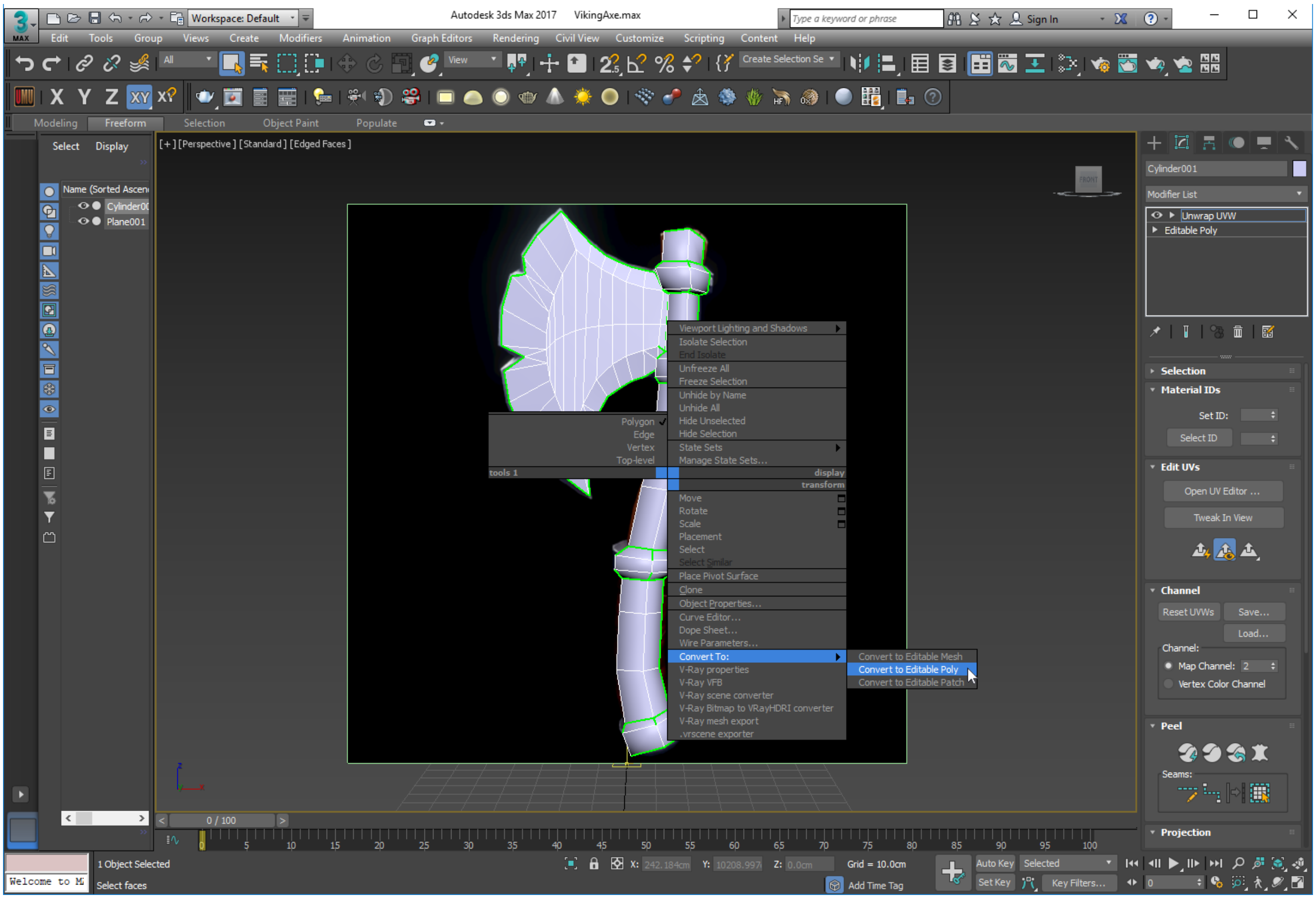
“Channel Change Warning”跳出来，然后按“Move”



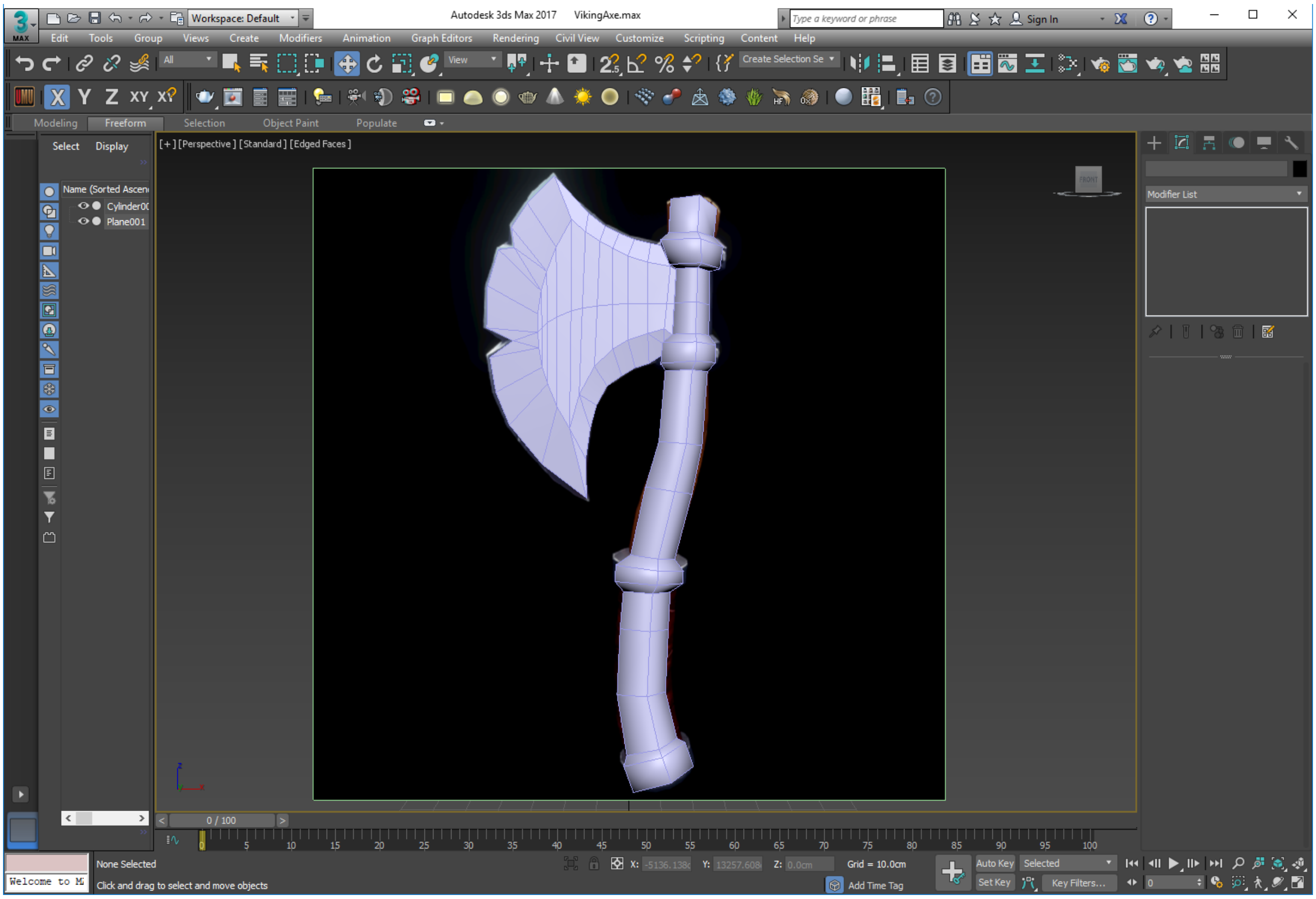
按了 “Move” 之后，现在 UV 1 和 UV 2 是一样的，所以你不需要再浪费时间弄 uv



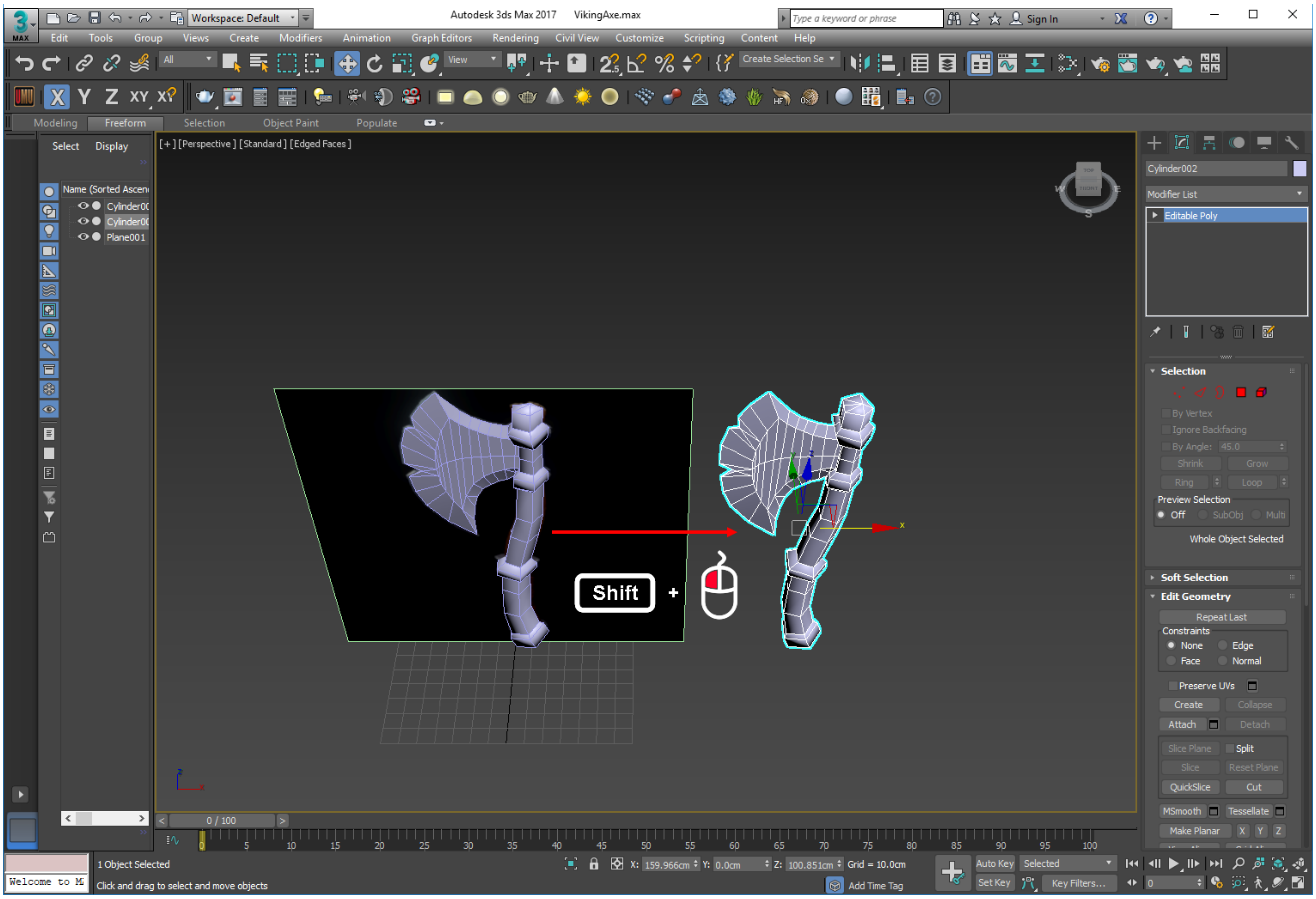
滑鼠右键 convert to editable poly，就可以储存 Mapping Channel 2 (或 UV 2)



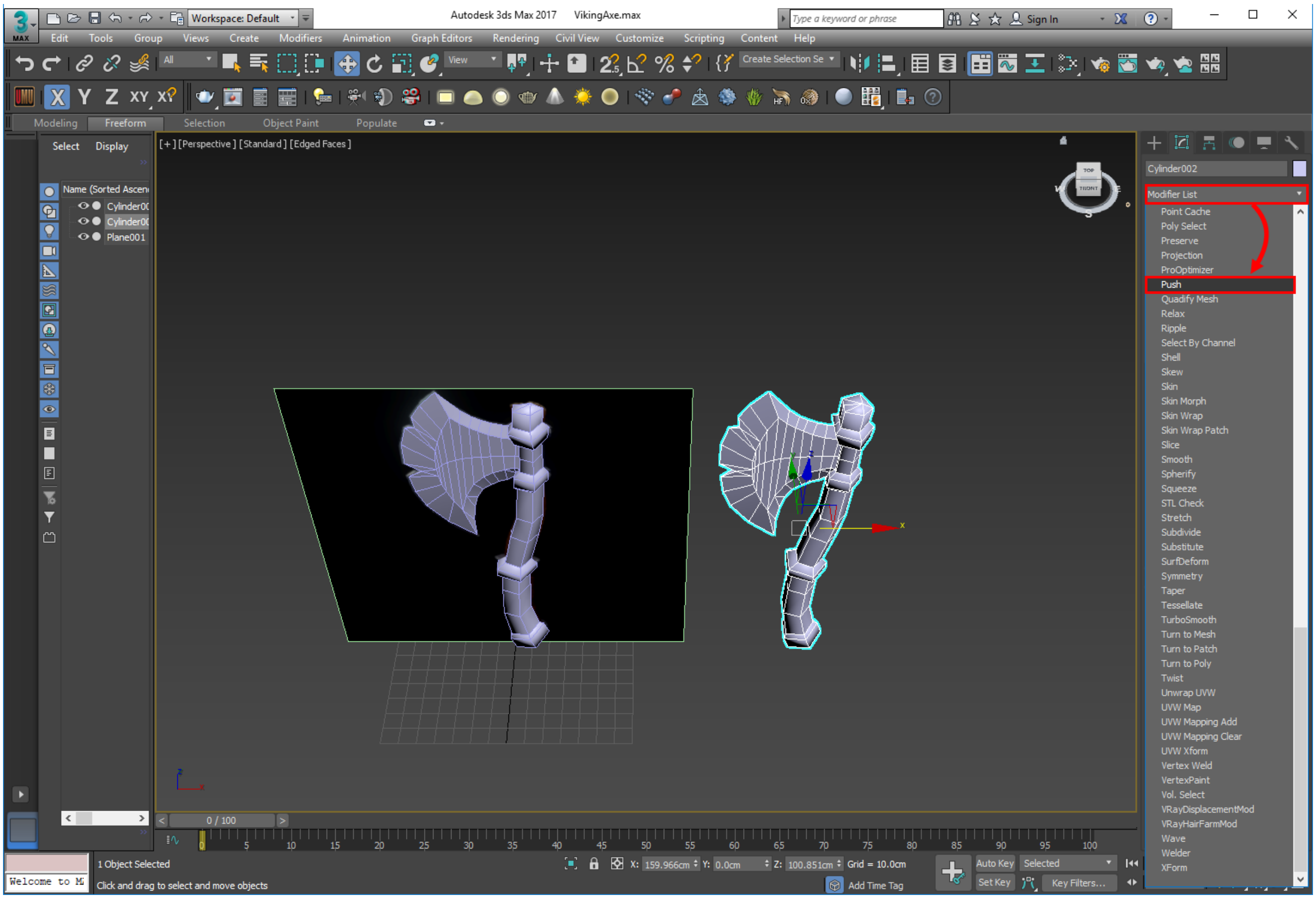
完成了



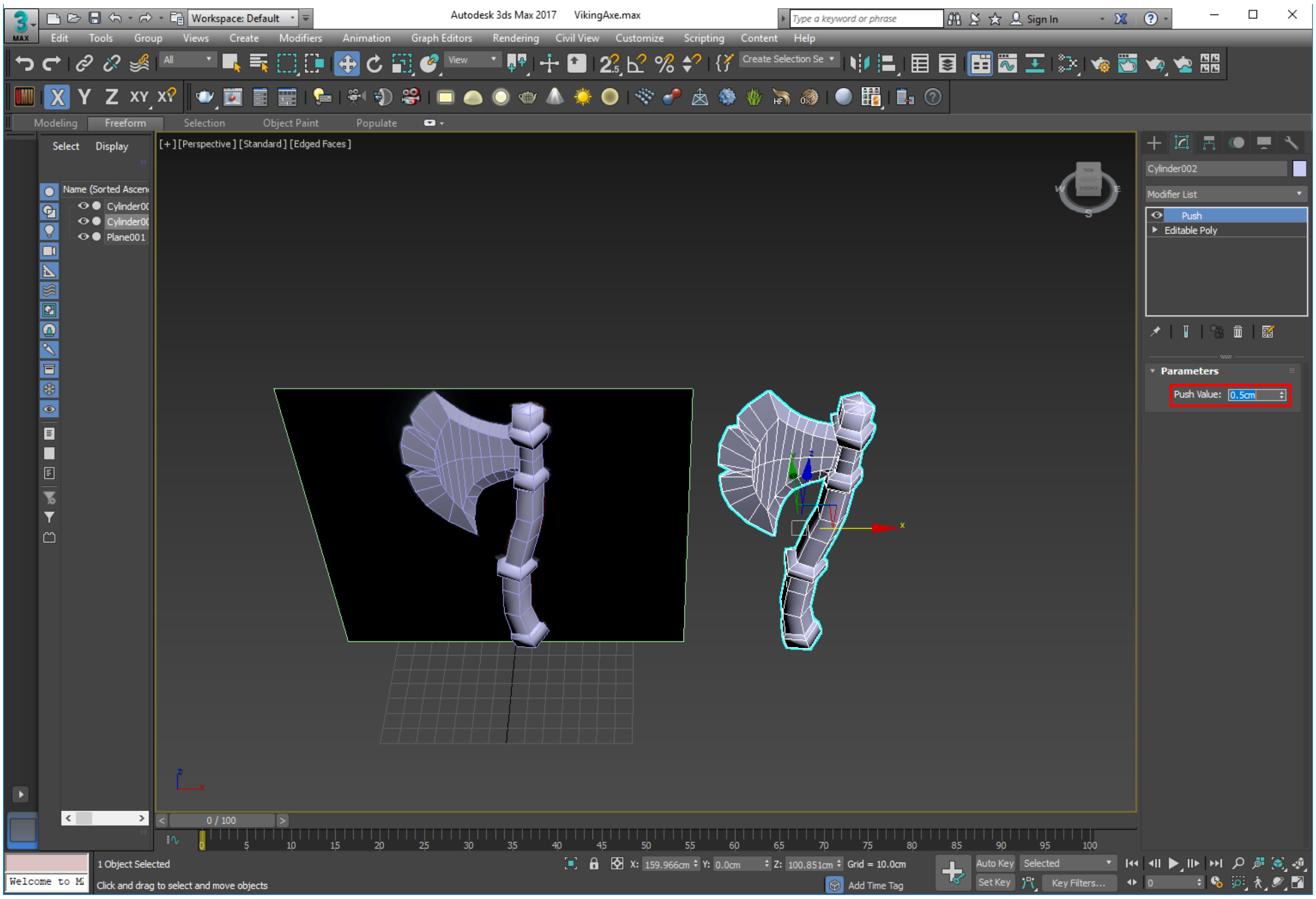
我们复制多一个斧头，因为我们需要“Push”在还没有导入到 ZBrush



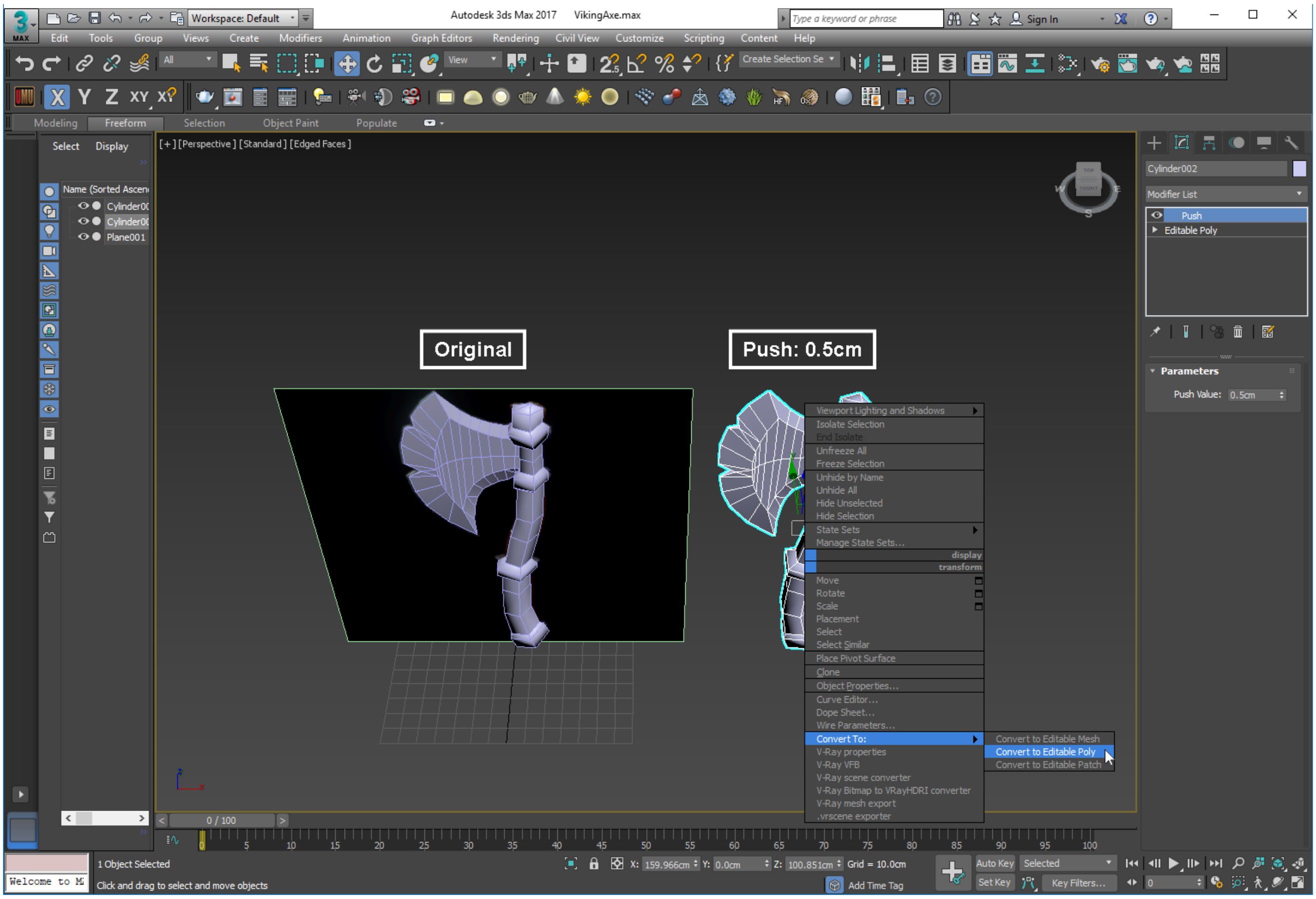
按 Modifier List → Push



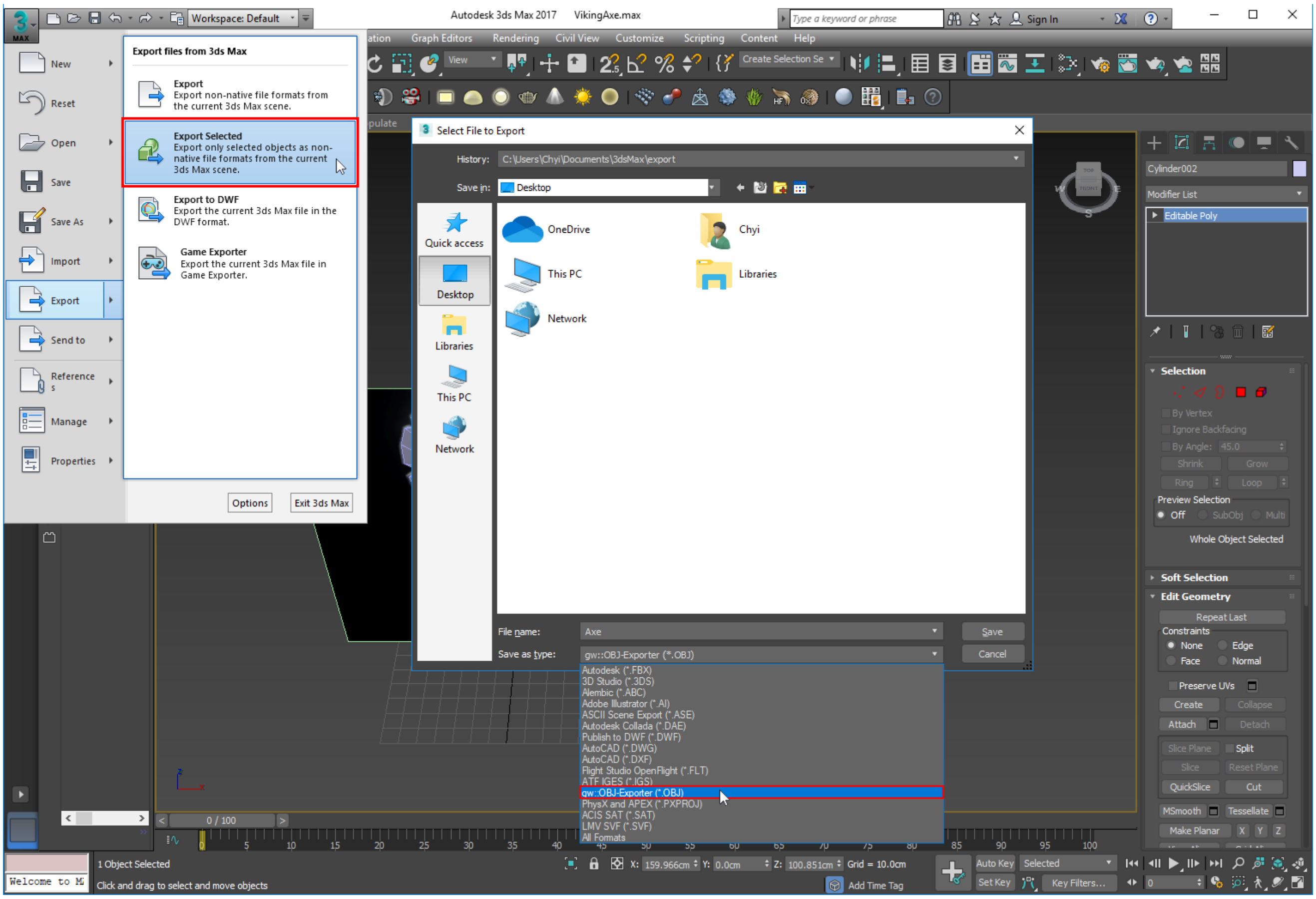
修改 Push value: 0.5cm



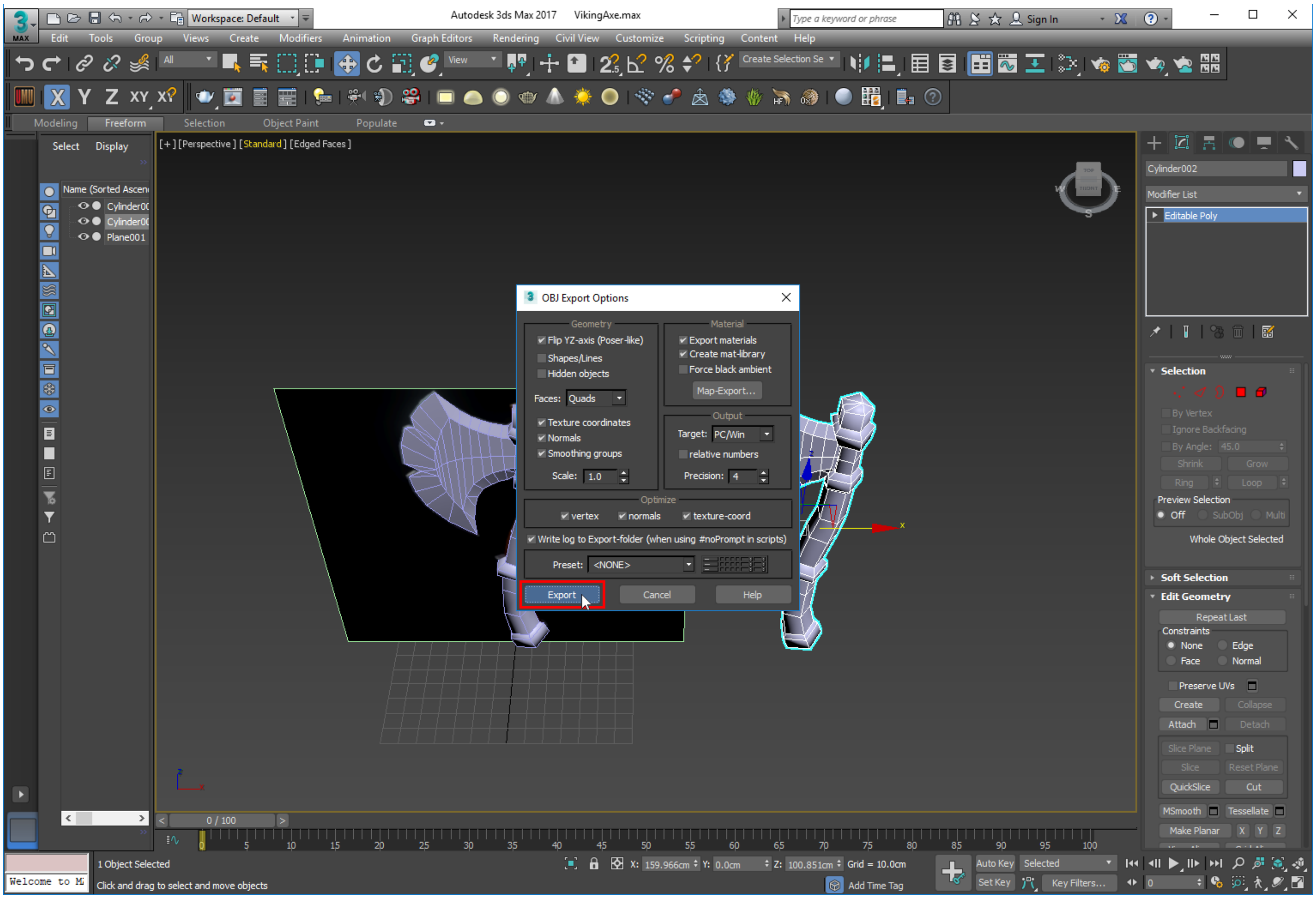
Push 了之后，滑鼠右键 convert to editable poly，然后我们需要导出成 obj



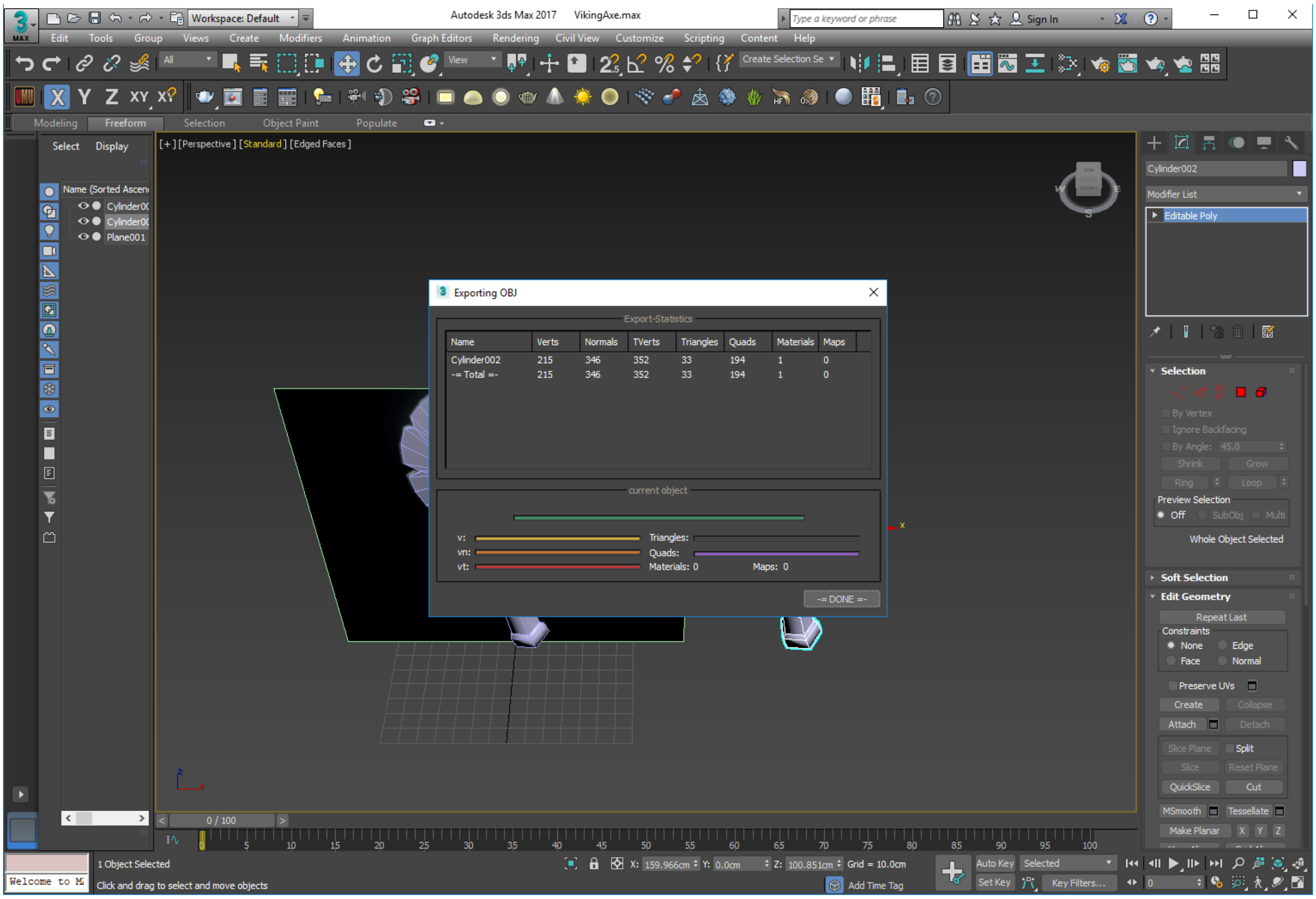
Export → Export Selected (确保存储成 .obj)



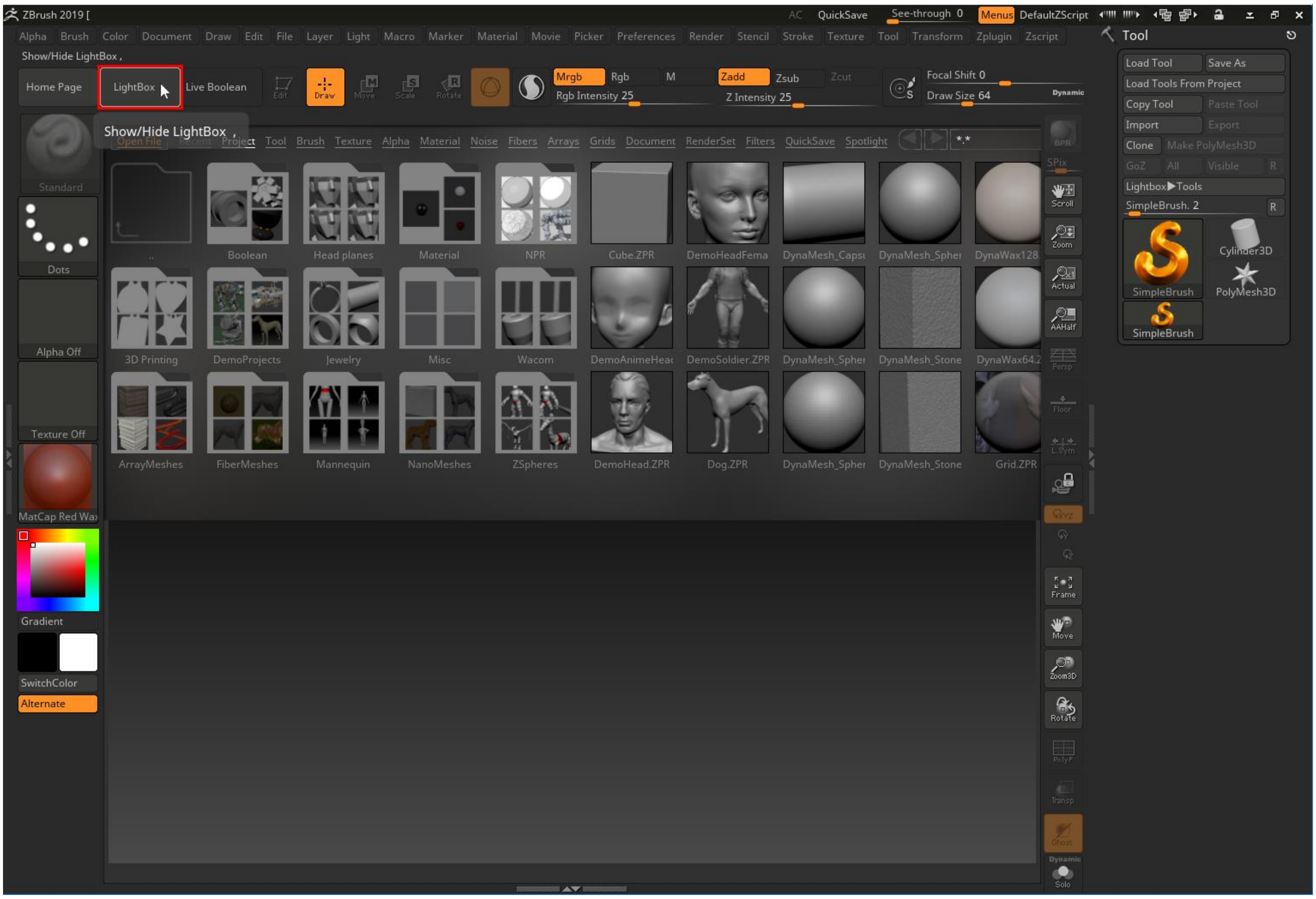
按“Export”



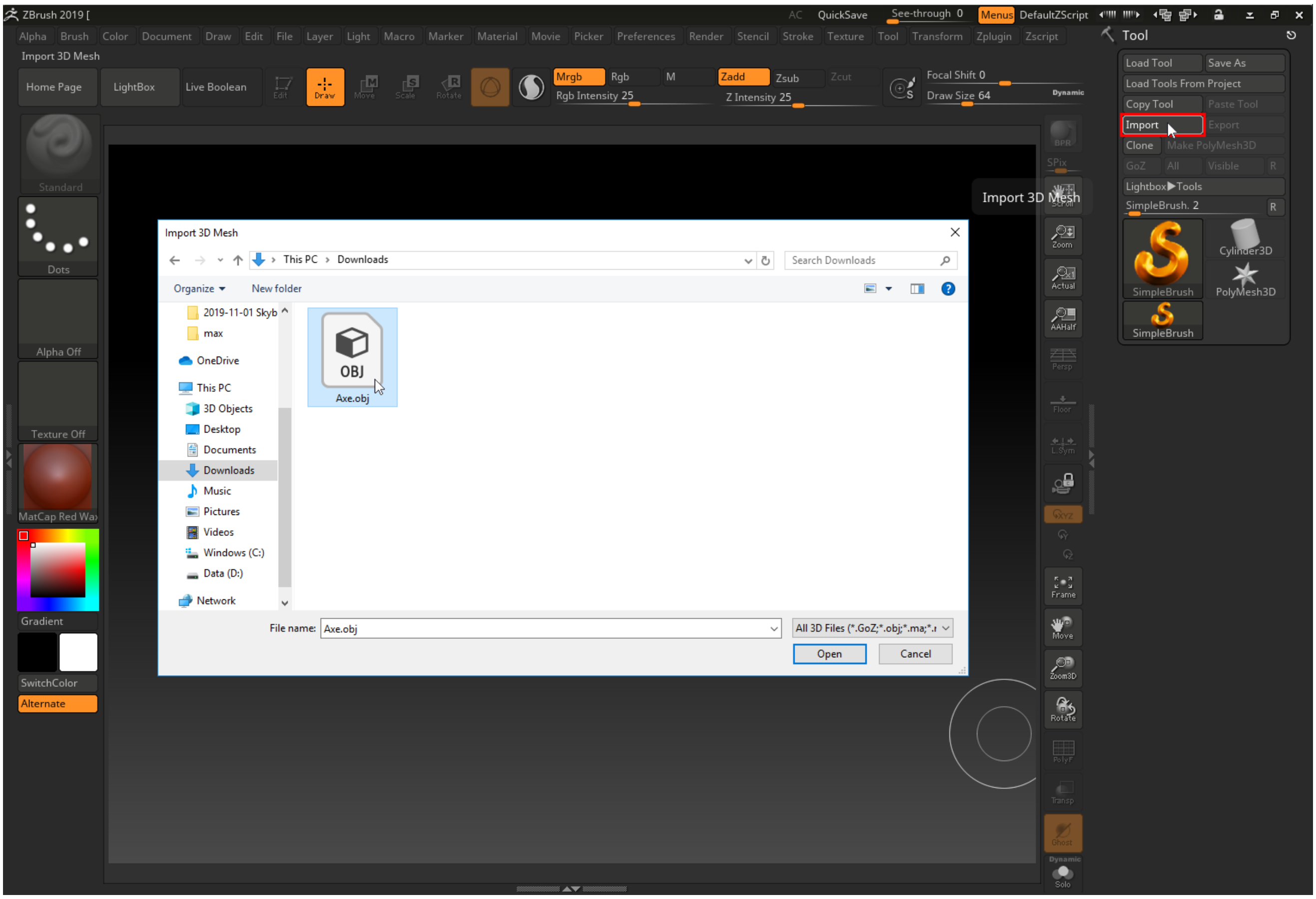
完成了，现在可以打开 ZBrush



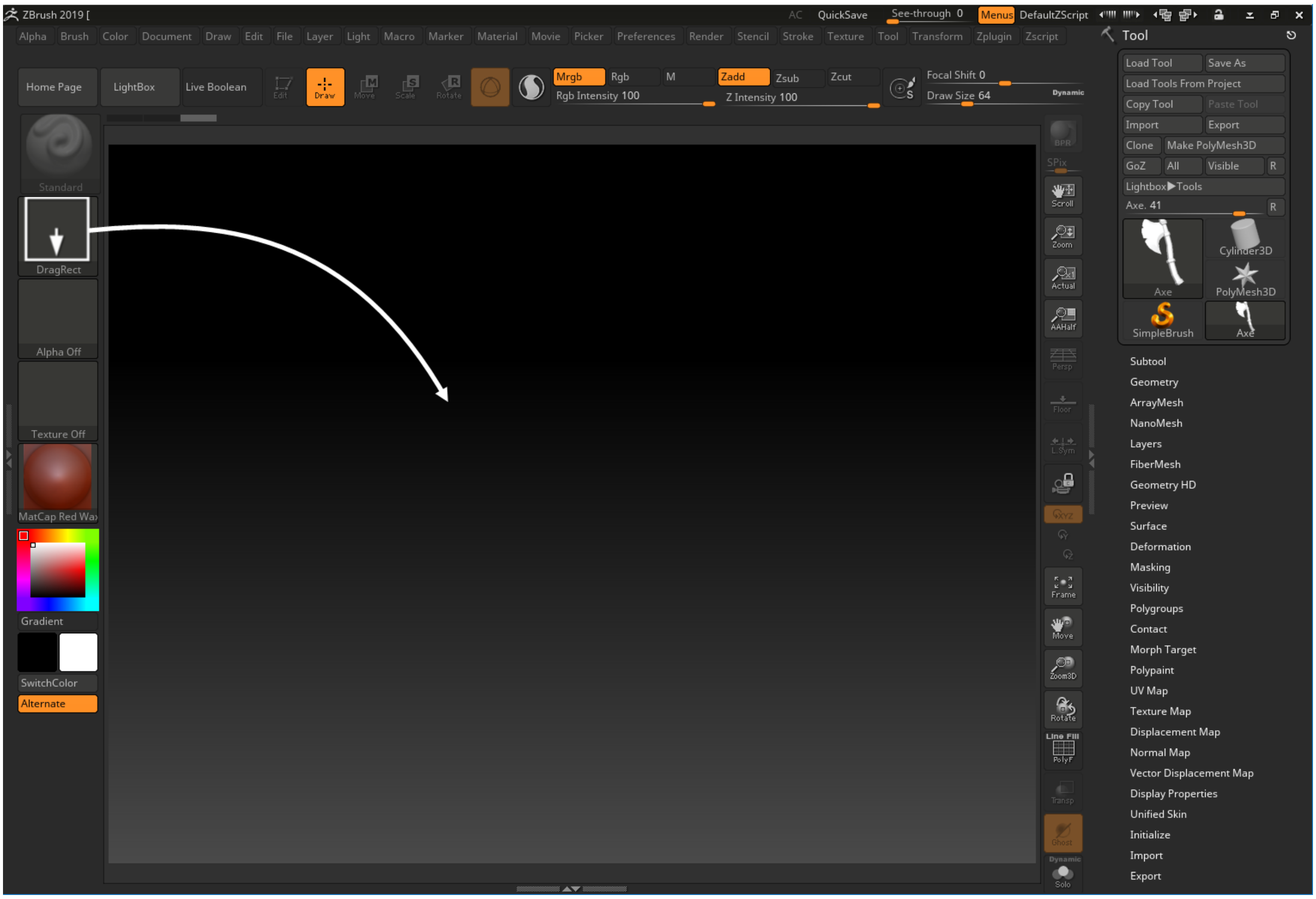
打开 ZBrush 之后，隐藏“LightBox”



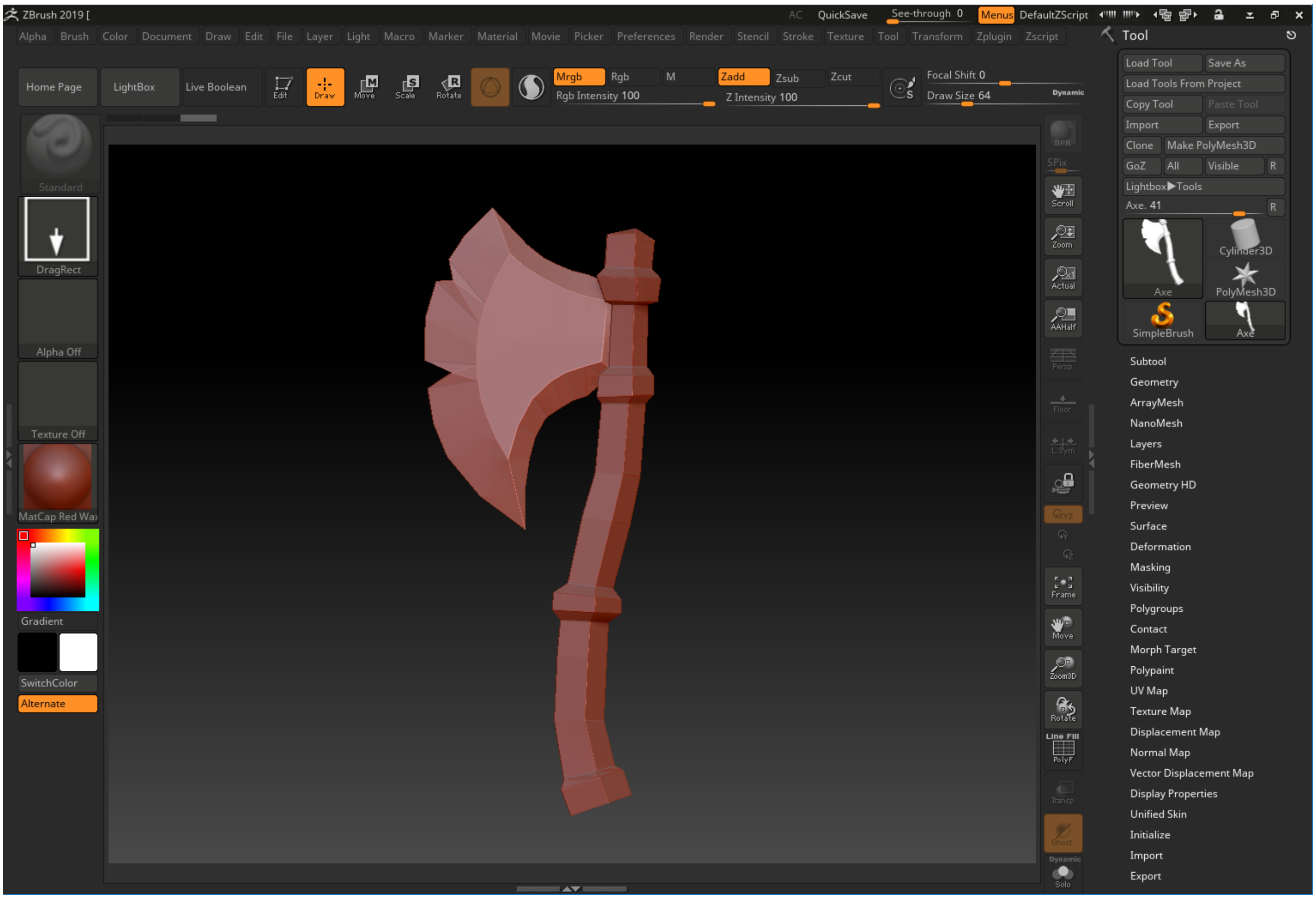
按“Import”然后导入 obj 文件



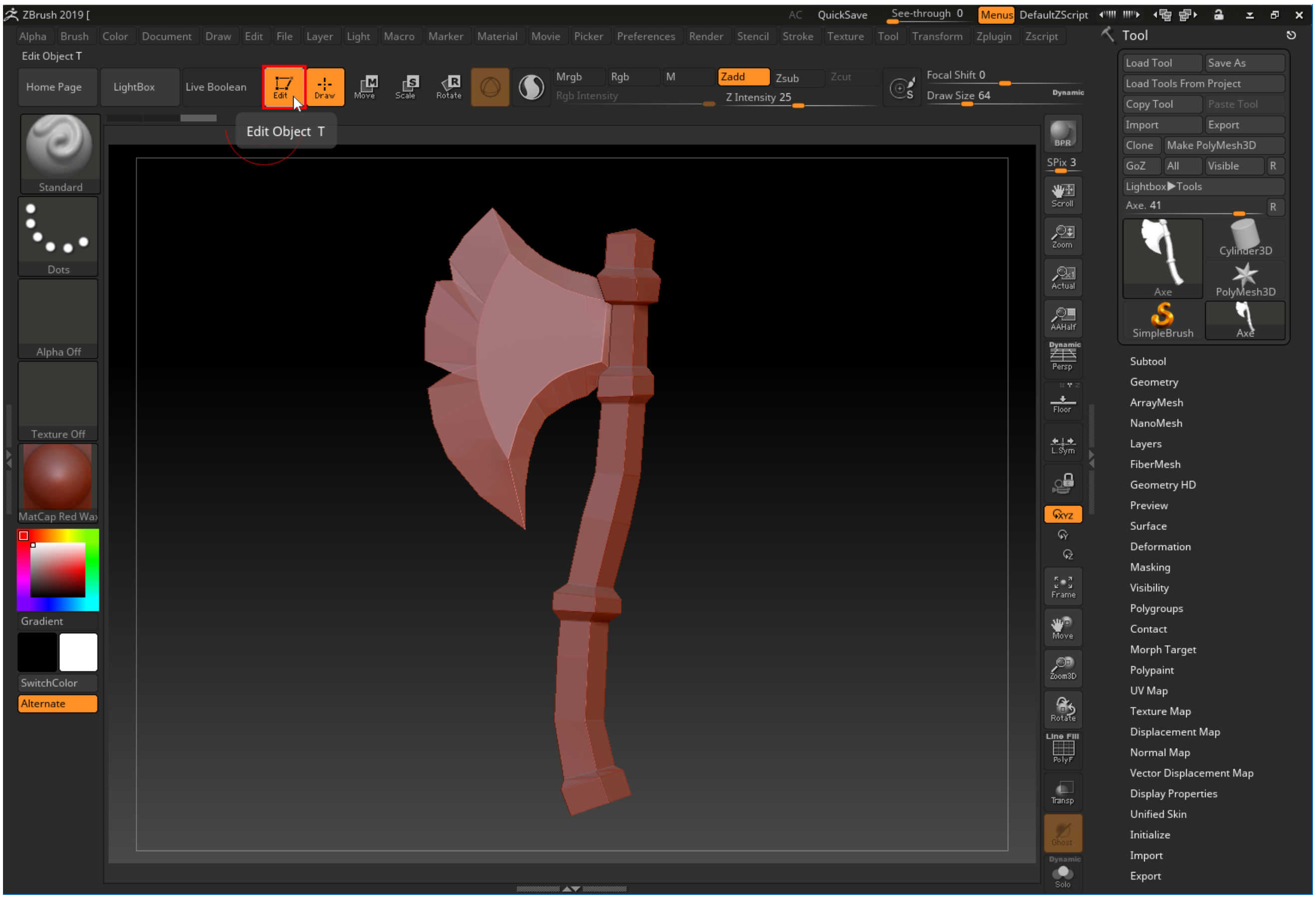
在视窗里面拖拉斧头



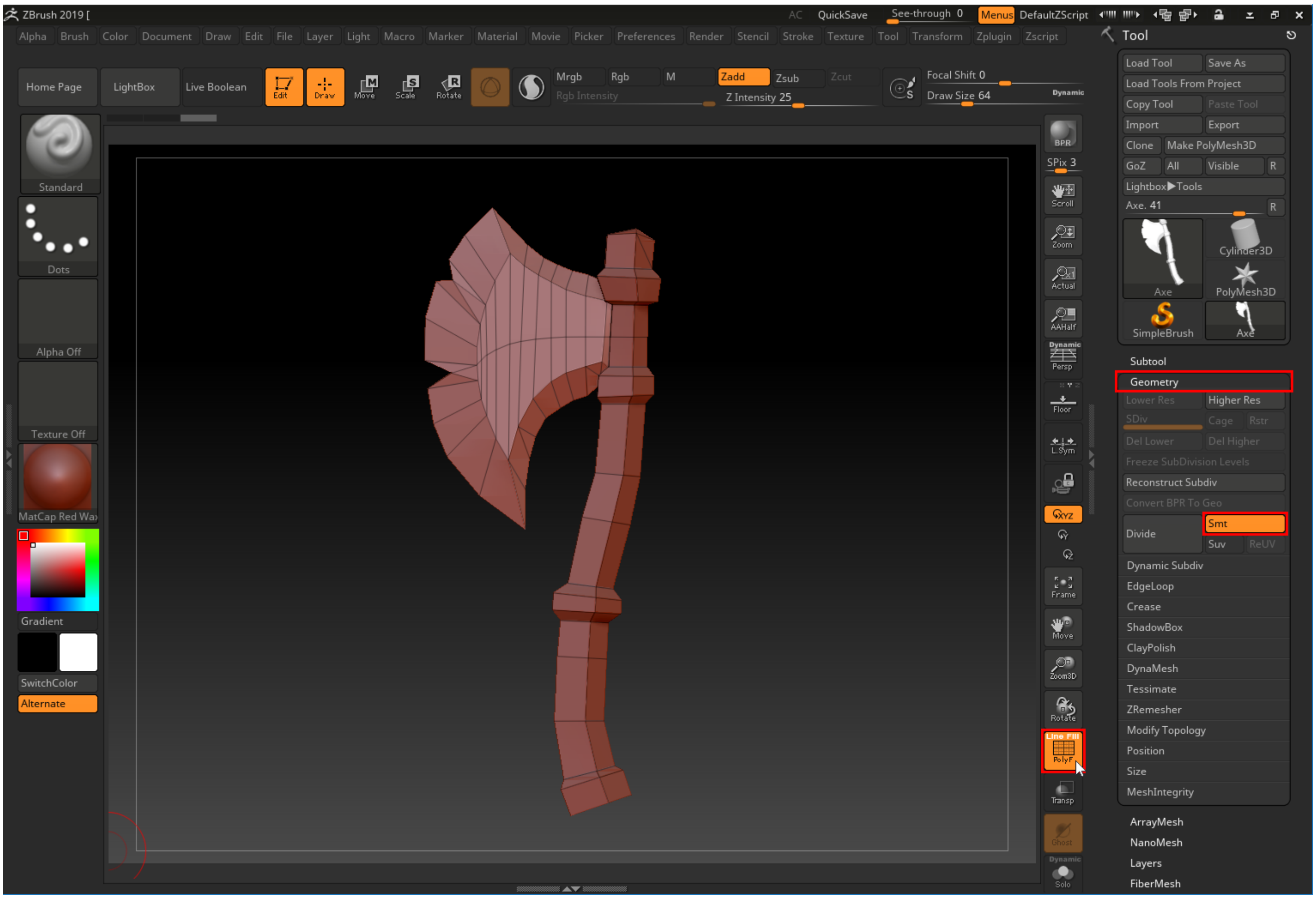
完成了



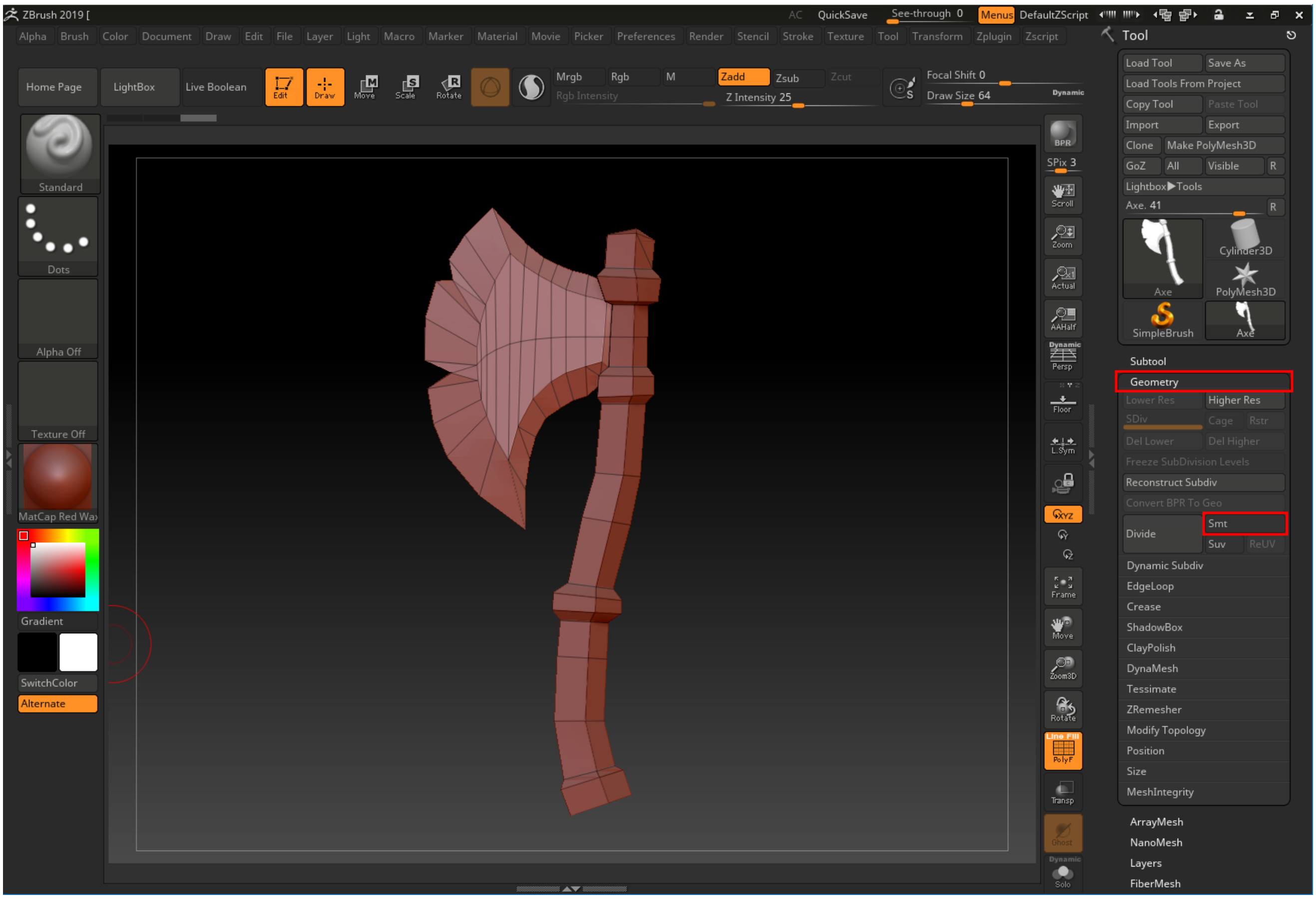
按“Edit Object”



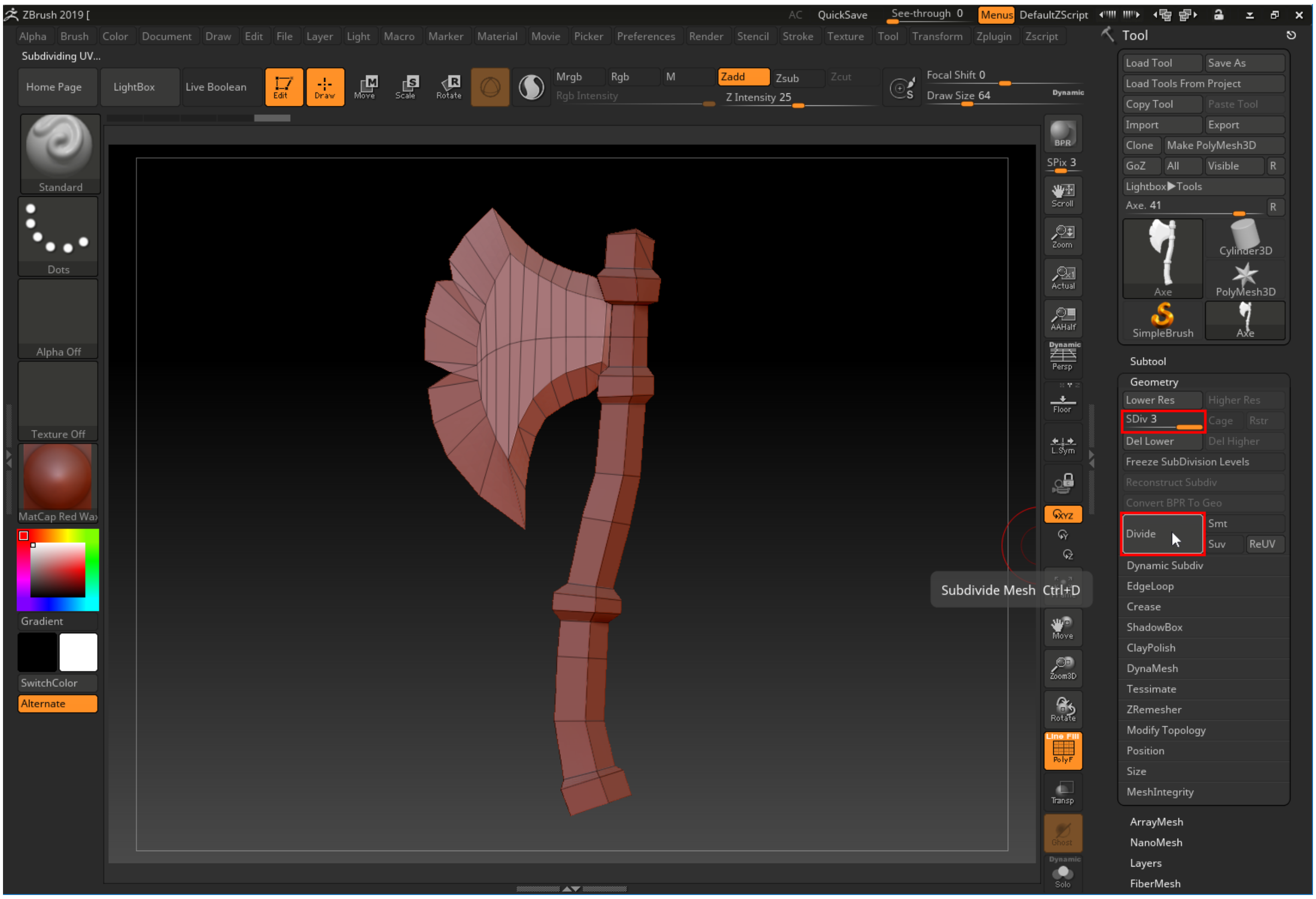
按下“Line Fill”就可以看到模型的线条，还有按下“Geometry”



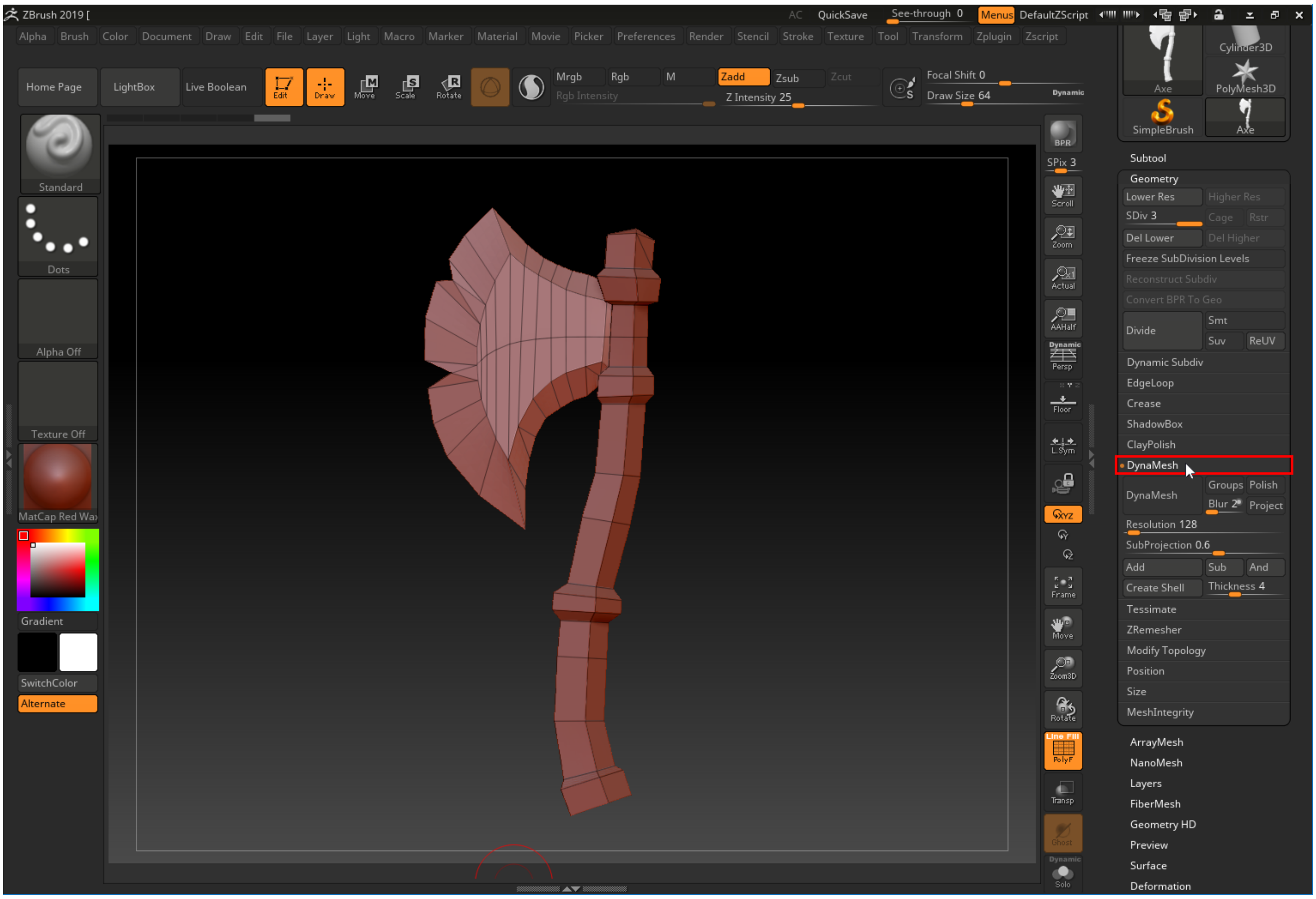
在 Geometry 里，关闭“Smt”



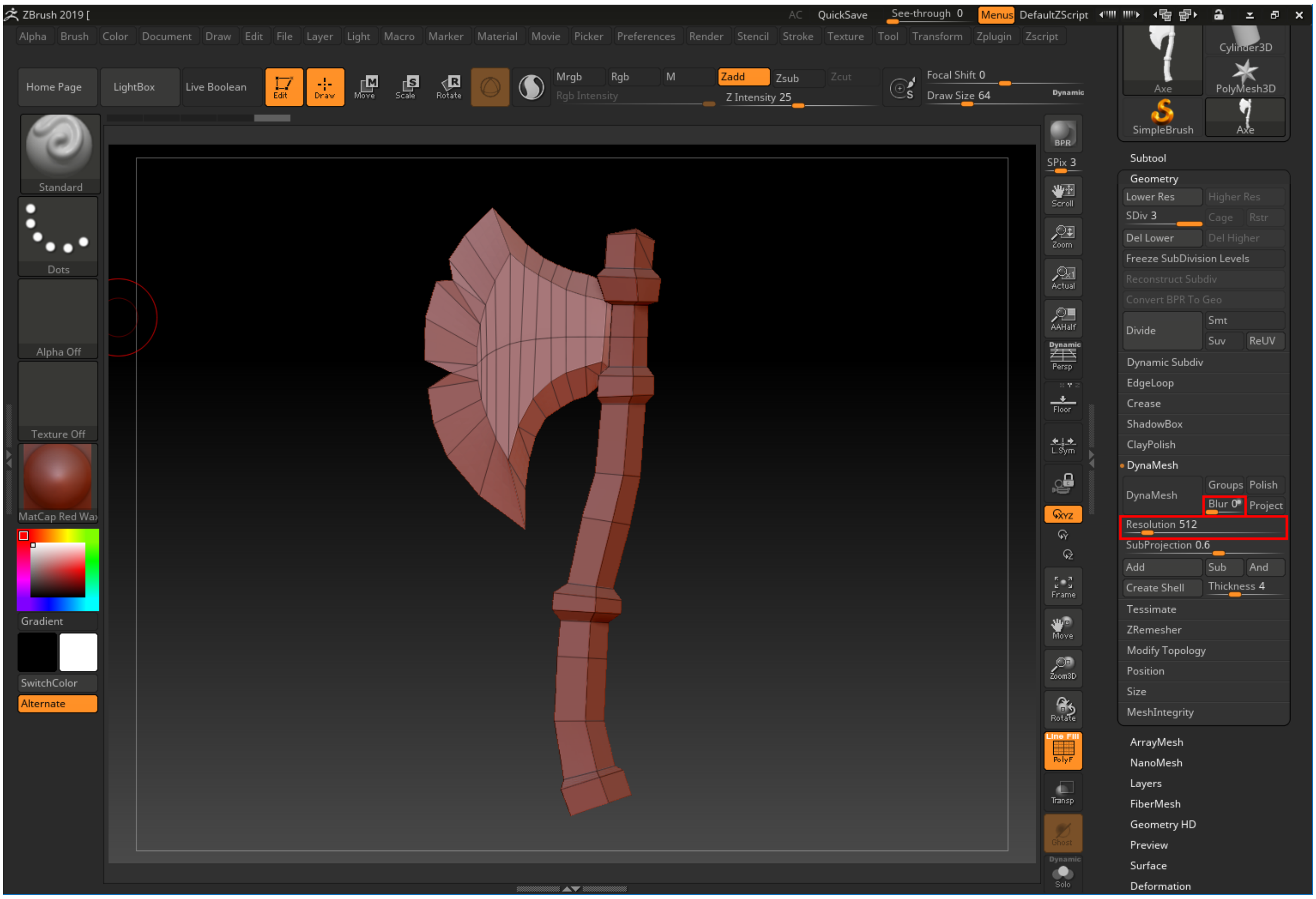
按“Divide”两次 (然后你可以看到 SDiv 3)



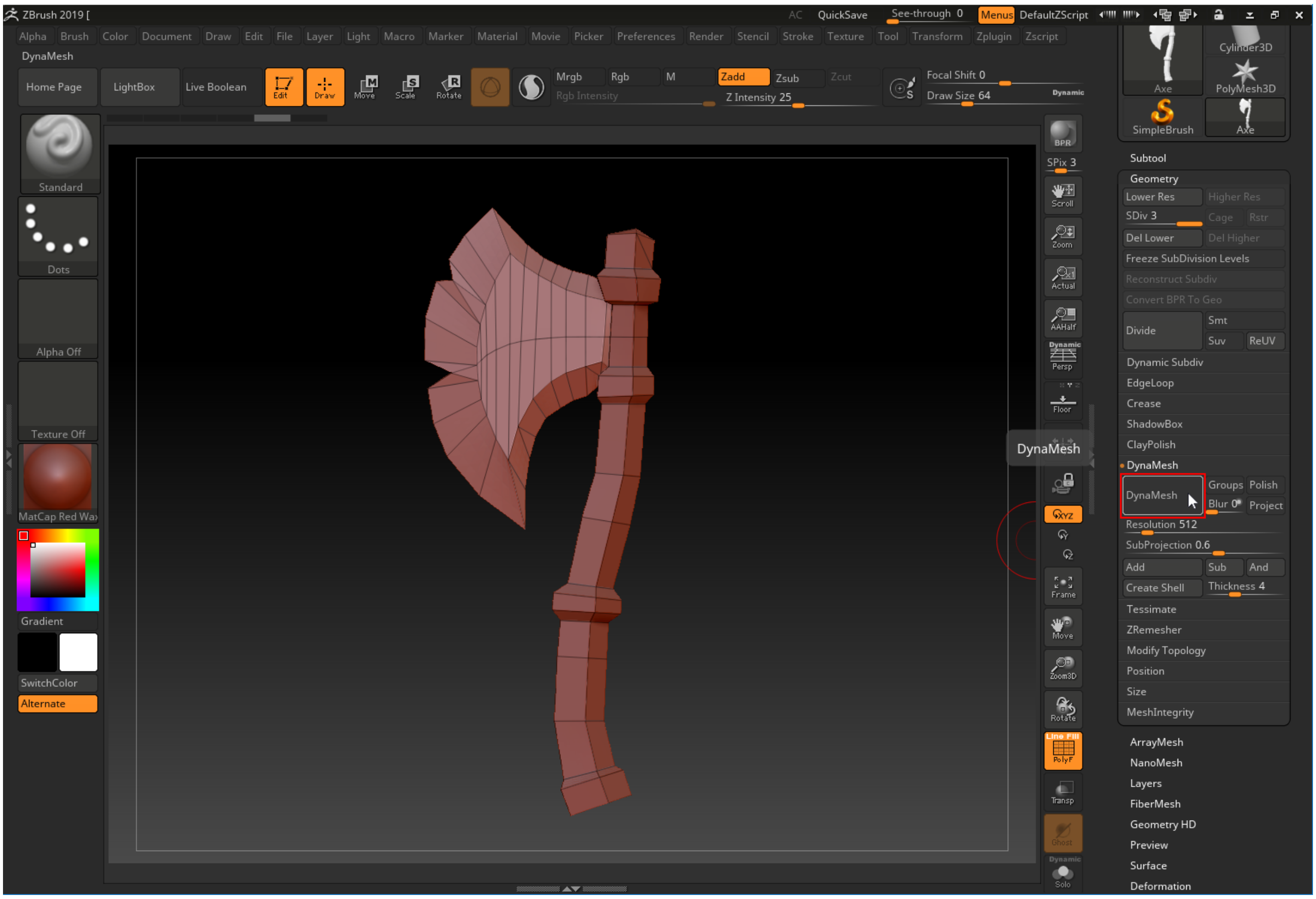
打开“DynaMesh”



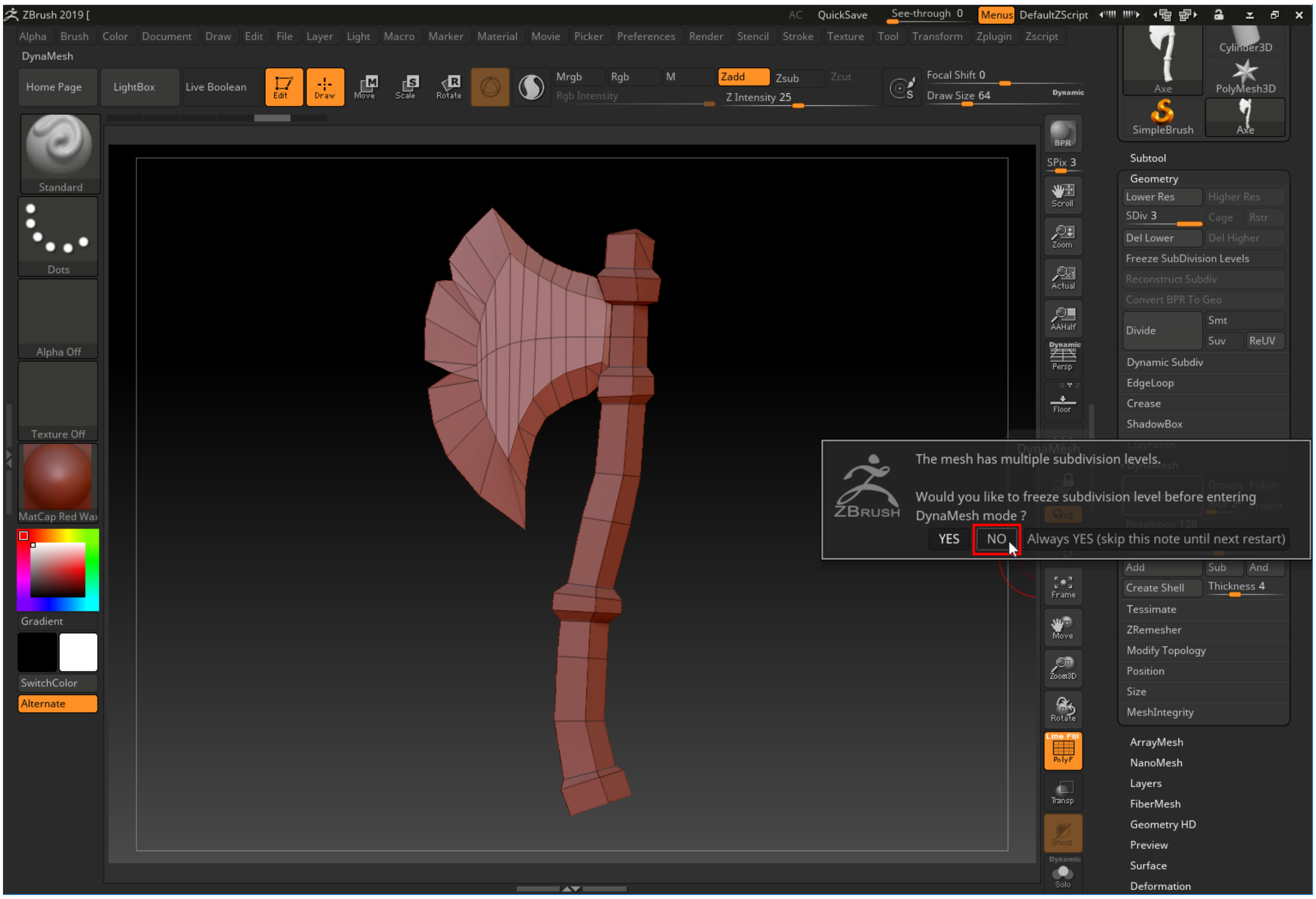
修改 Blur 0，和 Resolution 512 或 1024



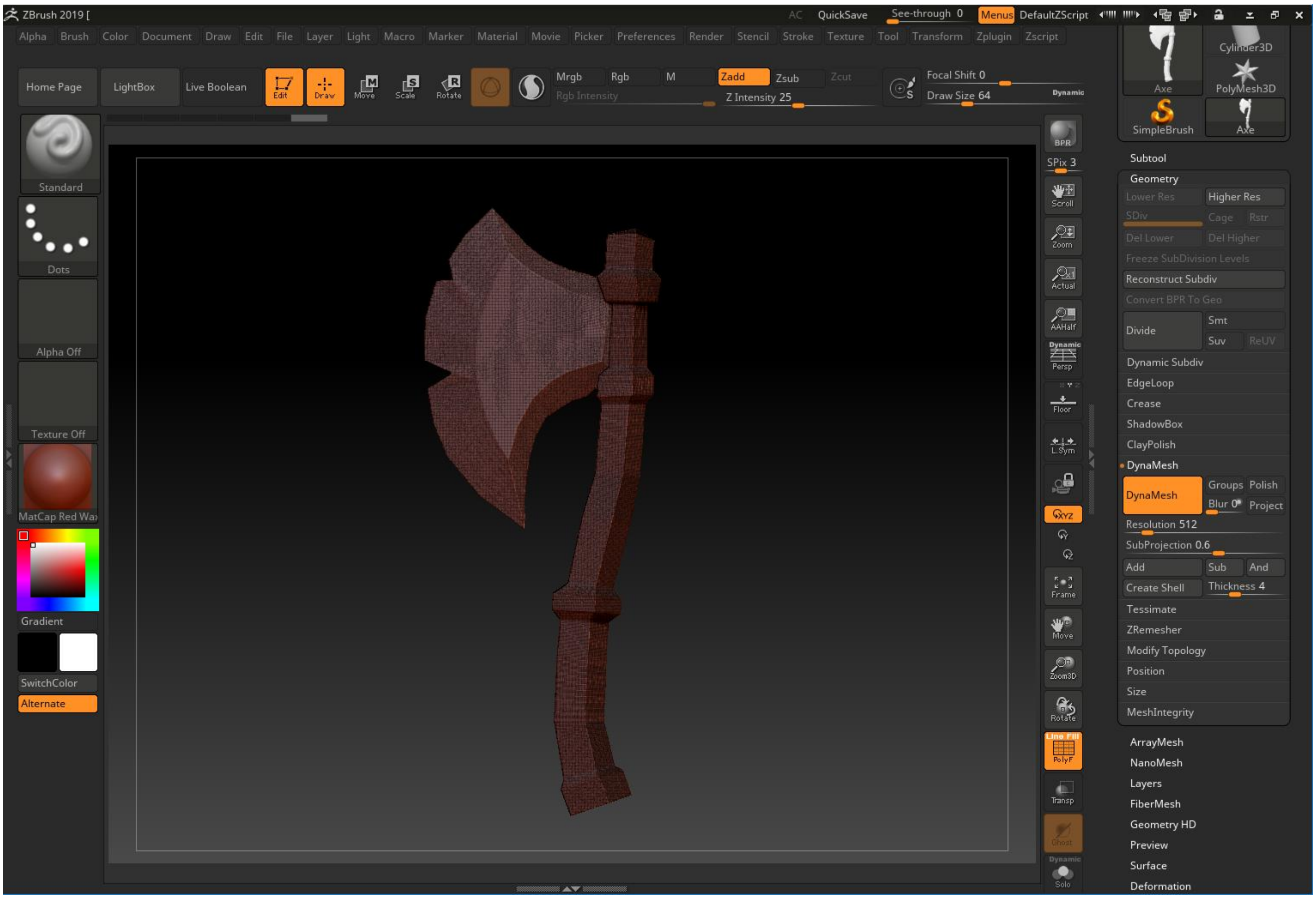
按下 DynaMesh 按钮



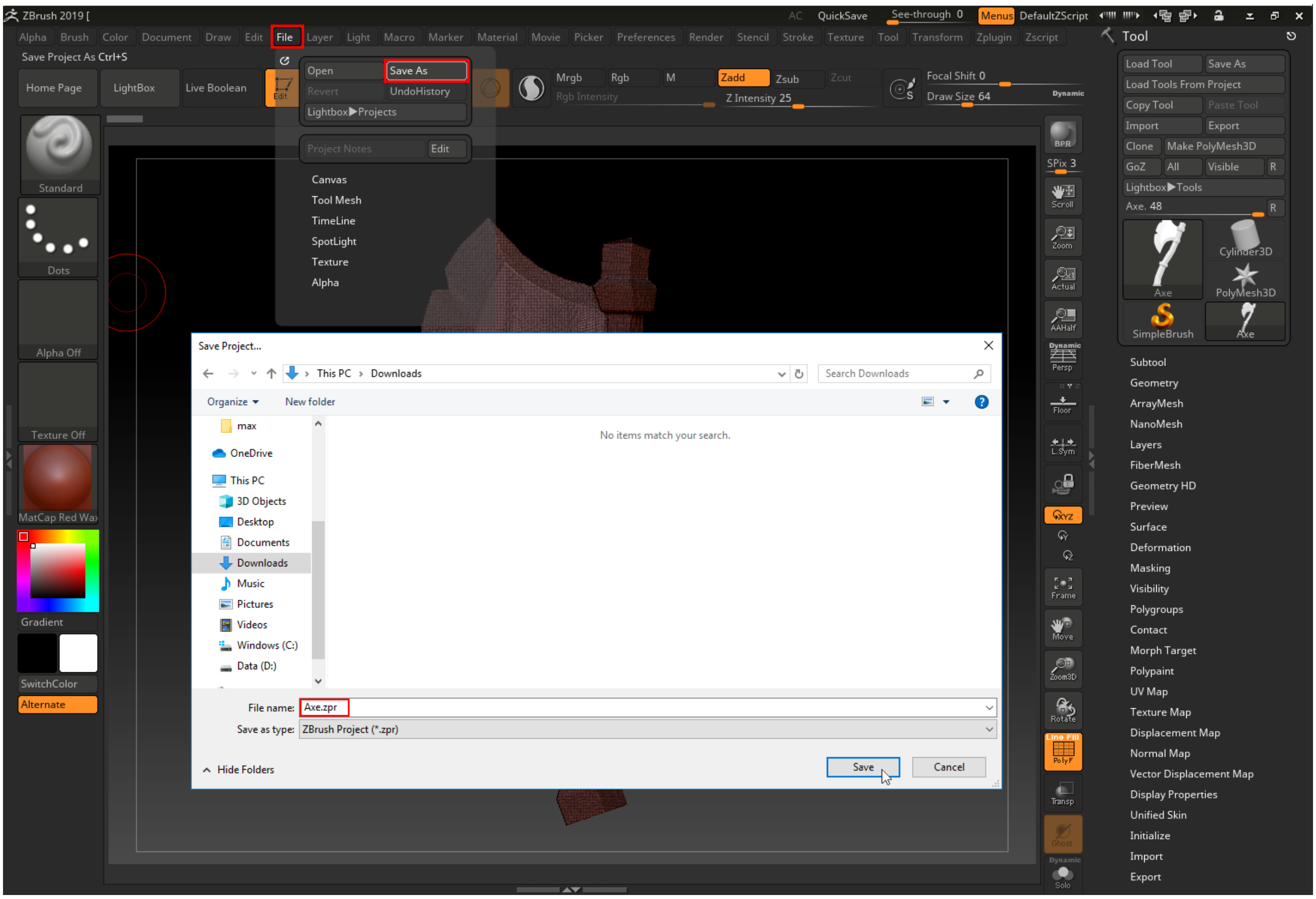
按下 DynaMesh 之后，就按 NO



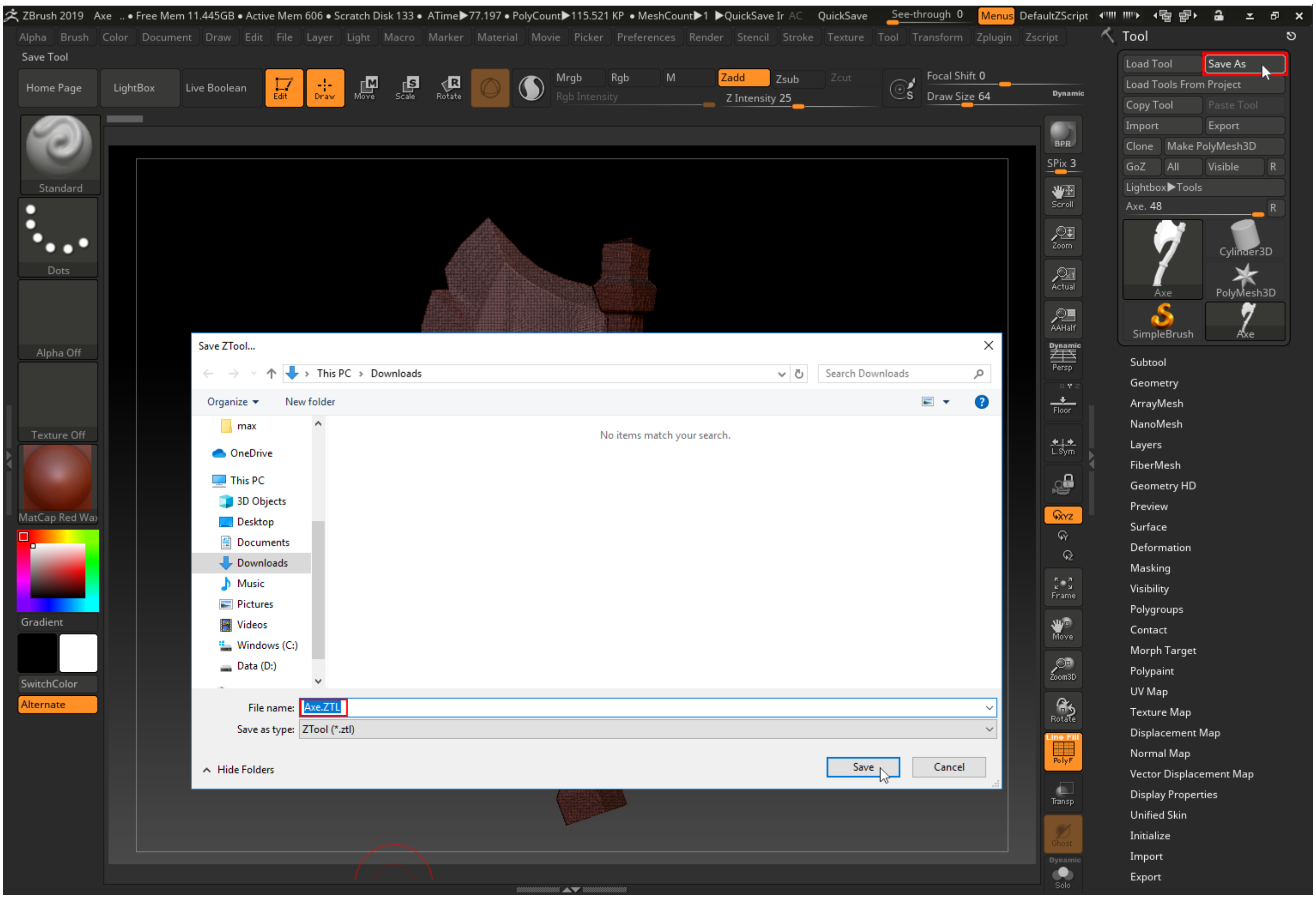
这就是已经按了 DynaMesh，现在的斧头模型可以看到很多线条



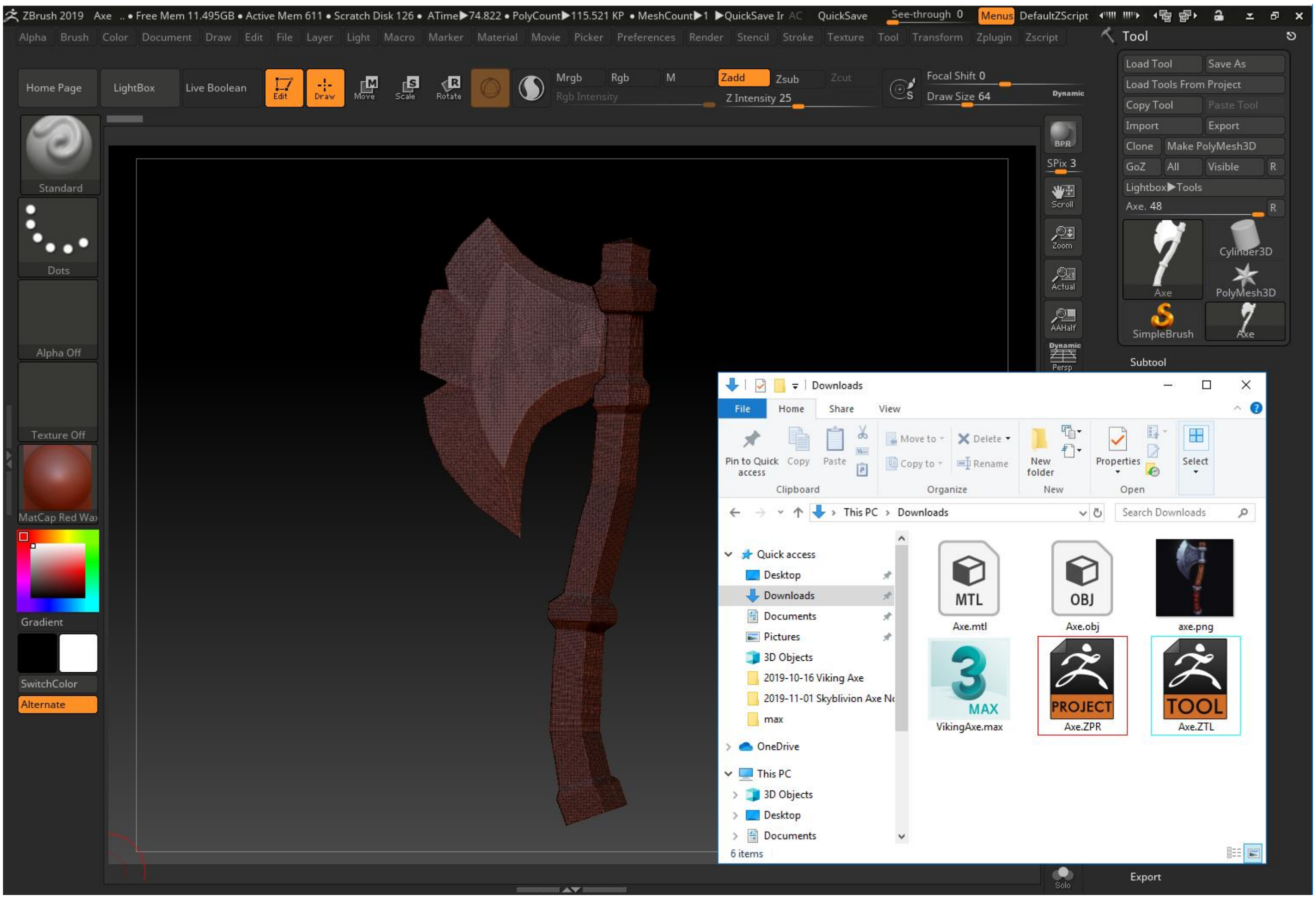
先把它存储 File → Save As → Axe.zpr (**zpr** 意思 **zbrush project**)



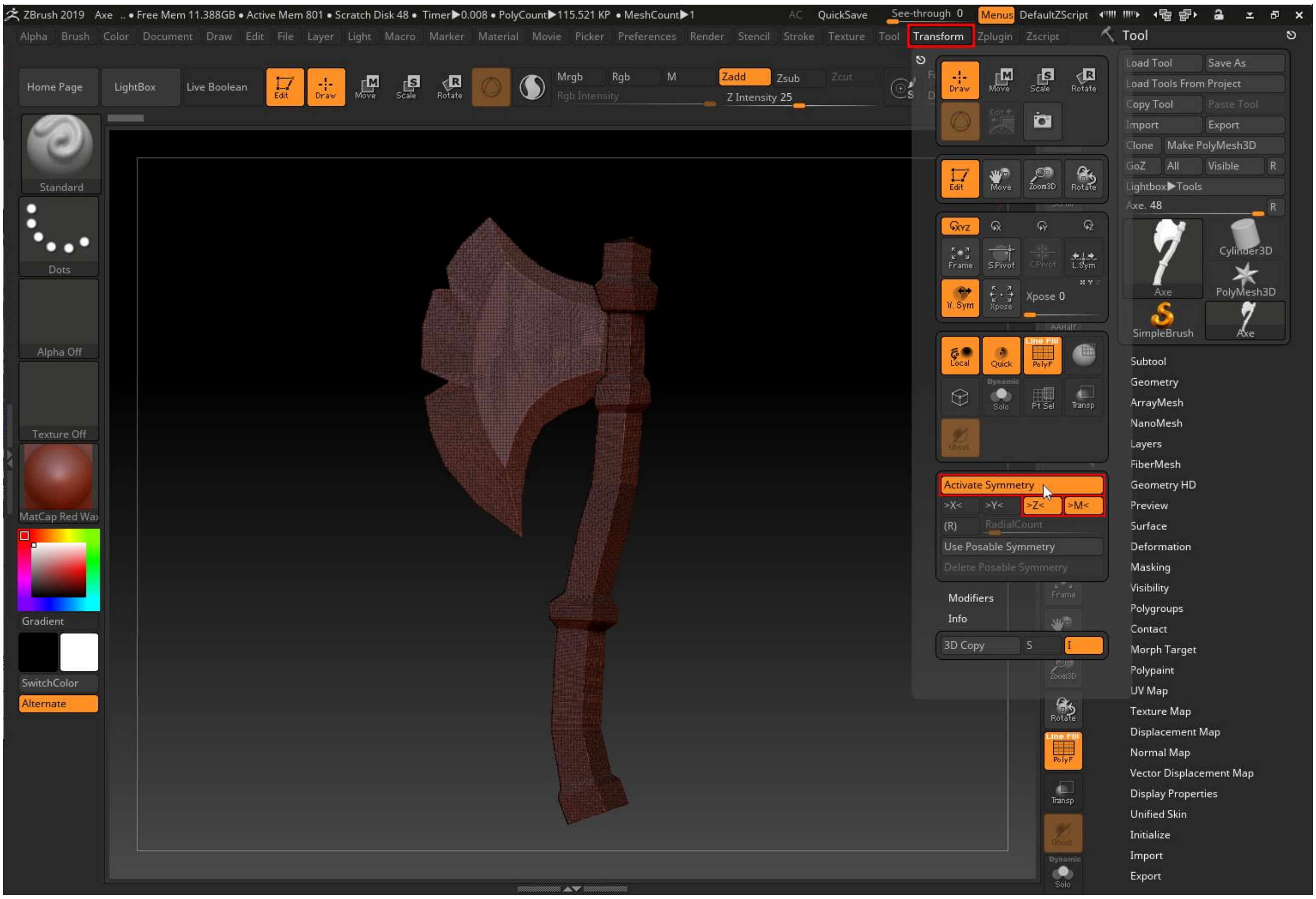
还有另外一个存储 Tool → Save As→ Axe.ztl (**ztl** 意思 **zbrush tool**)



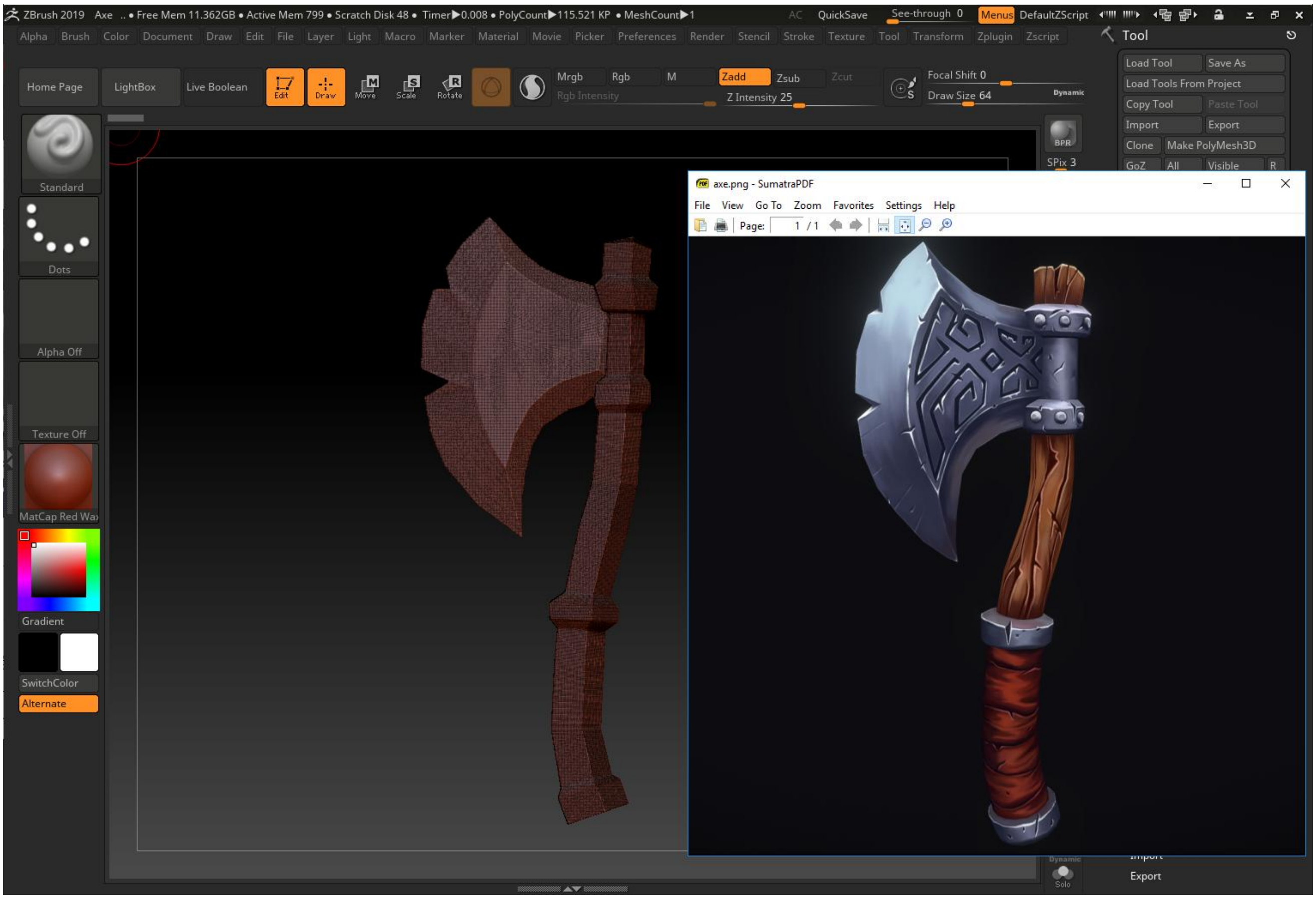
打开文件夹来检查看看 ZPR 和 ZTL 文件



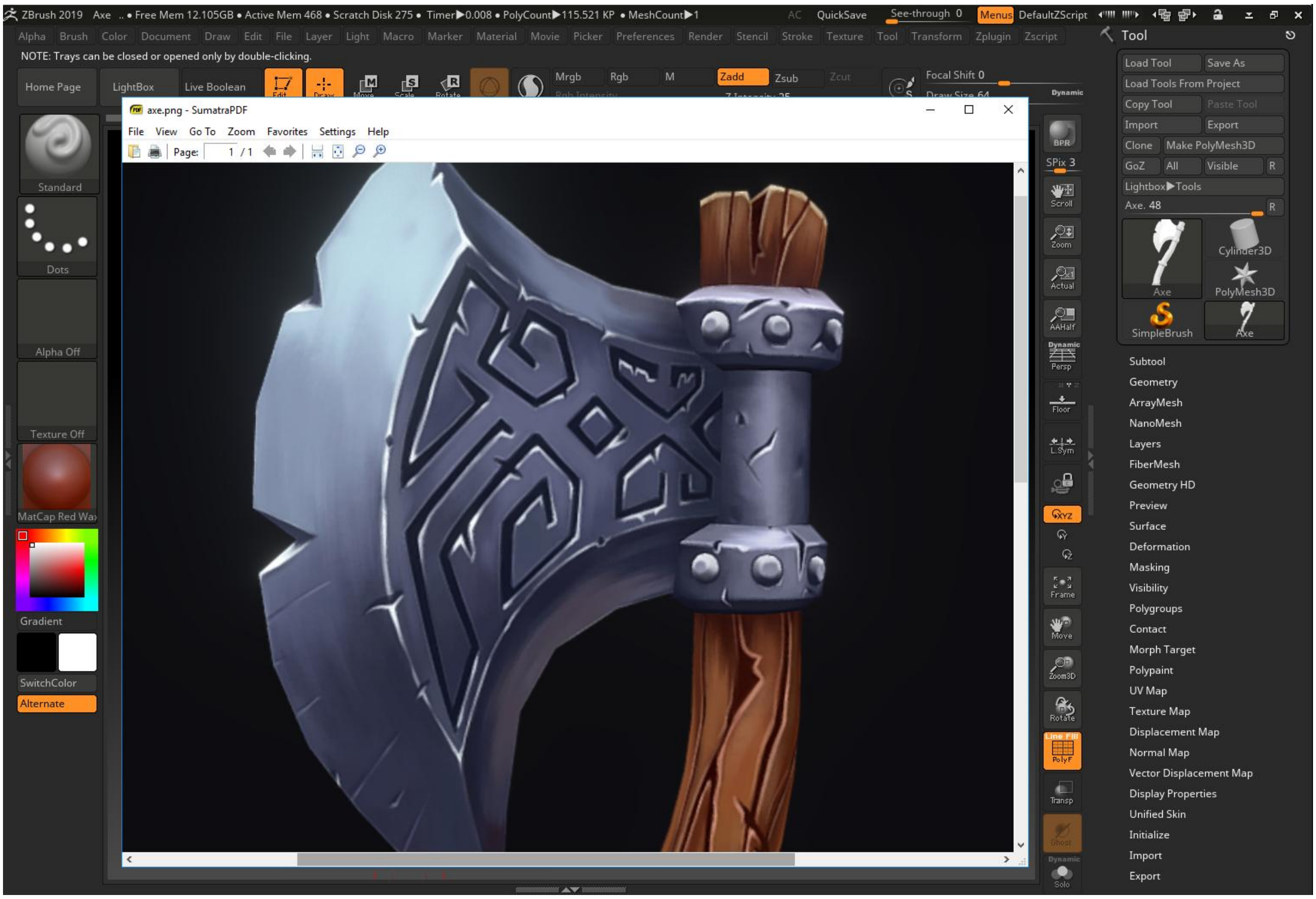
打开 symmetry，在 Transform → Activate Symmetry



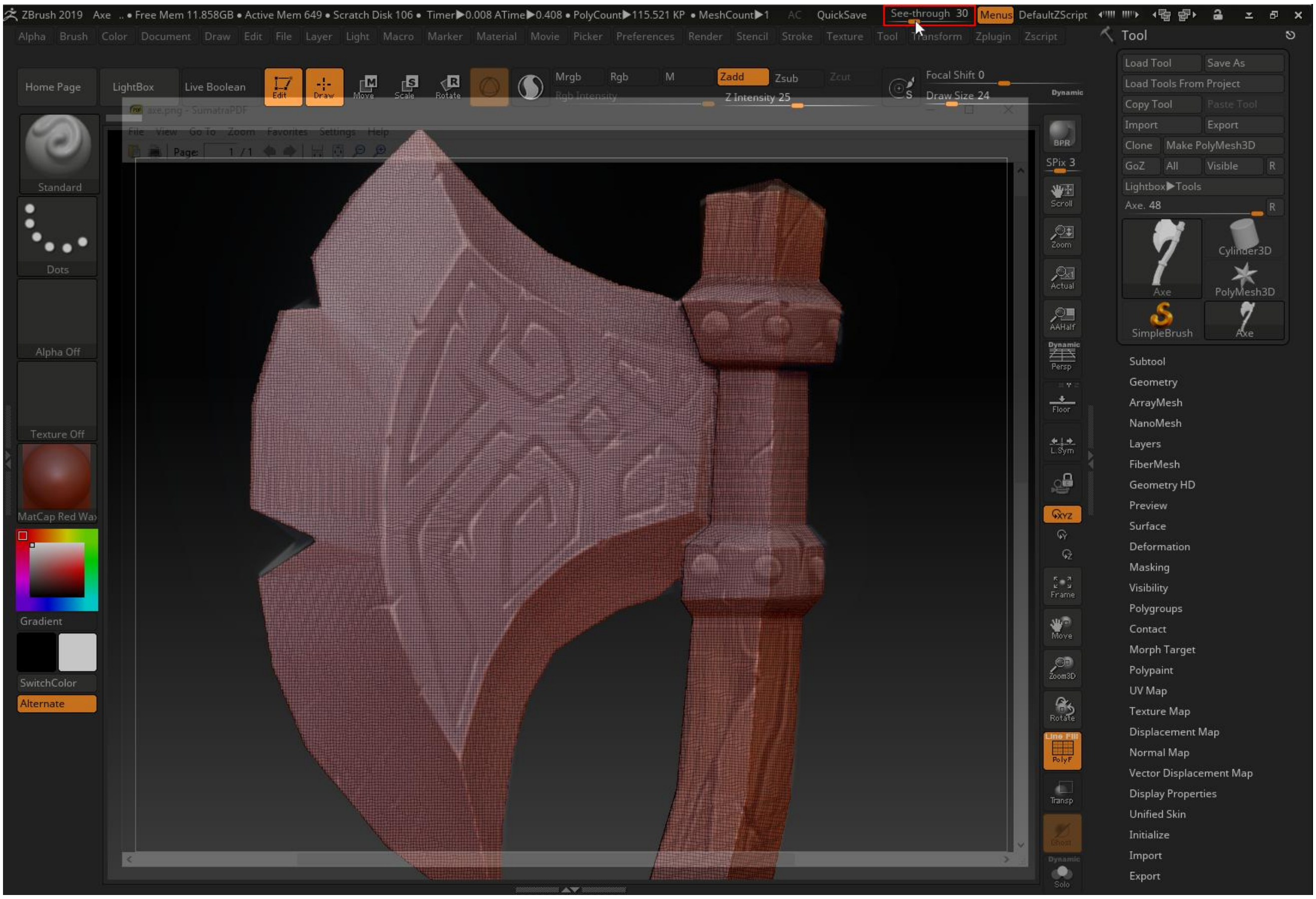
然后打开参考图



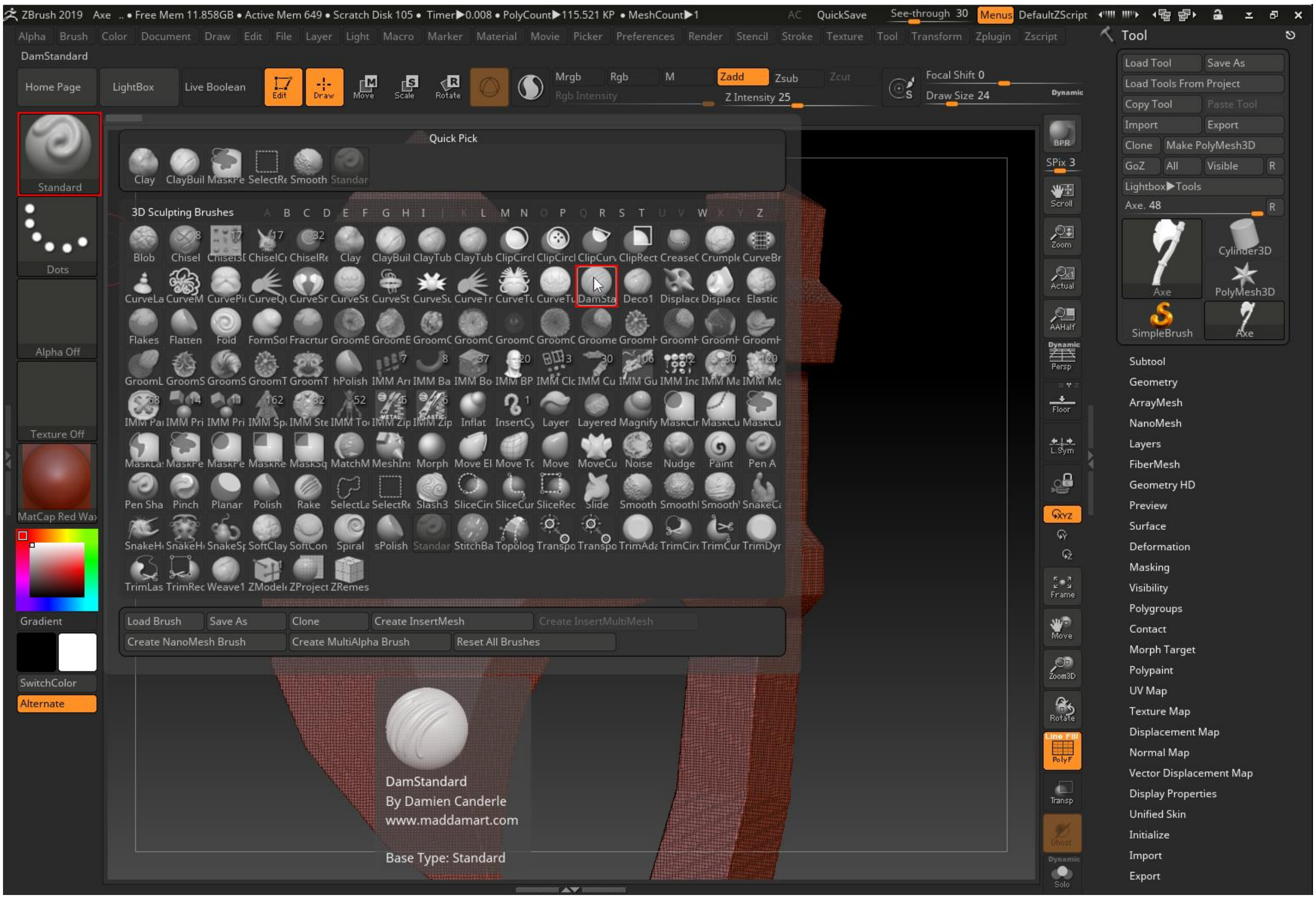
放大斧头的表面，然后我们要放在 Zbrush 的后面



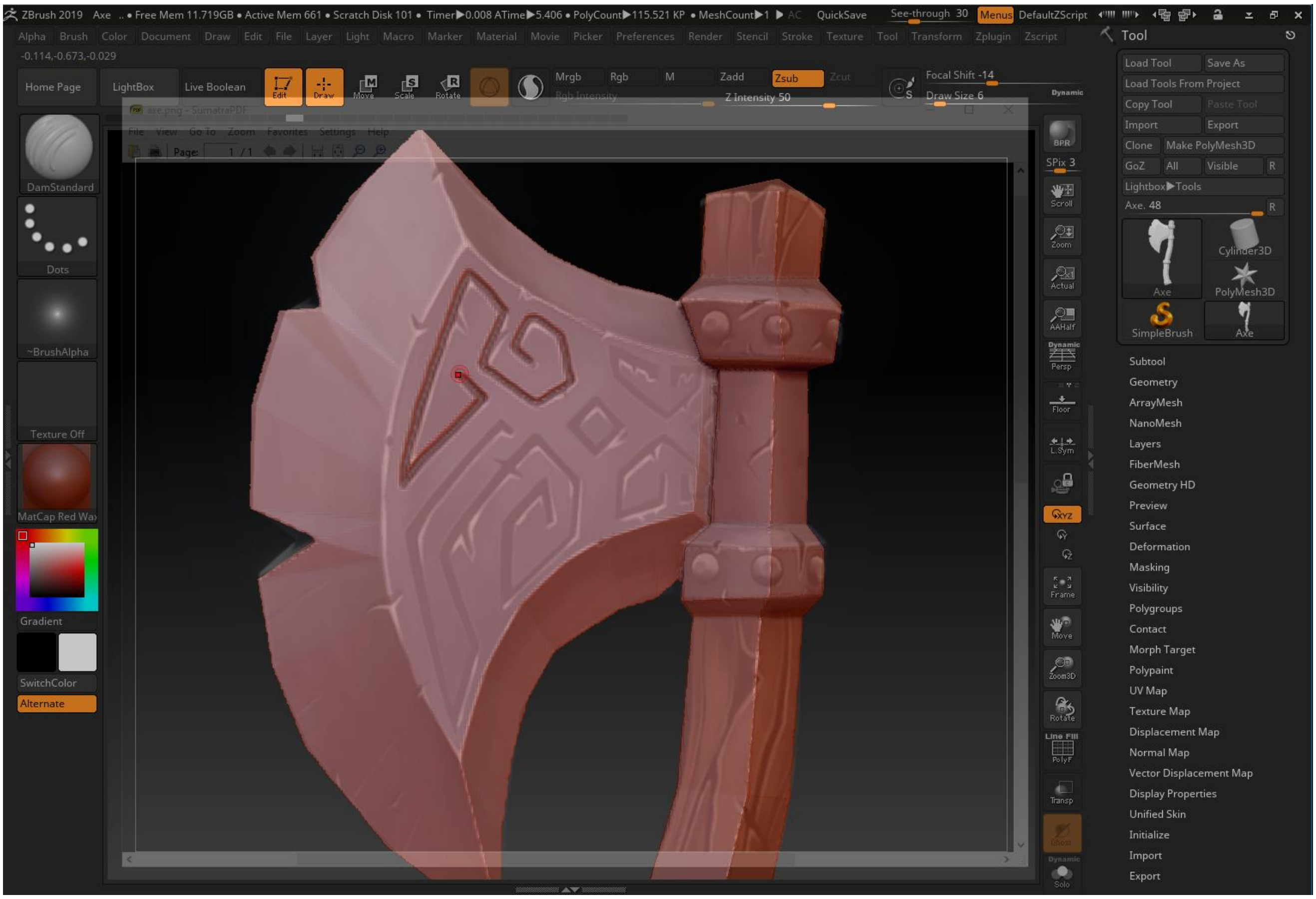
调整 see-through: 30，然后缩放斧头模型



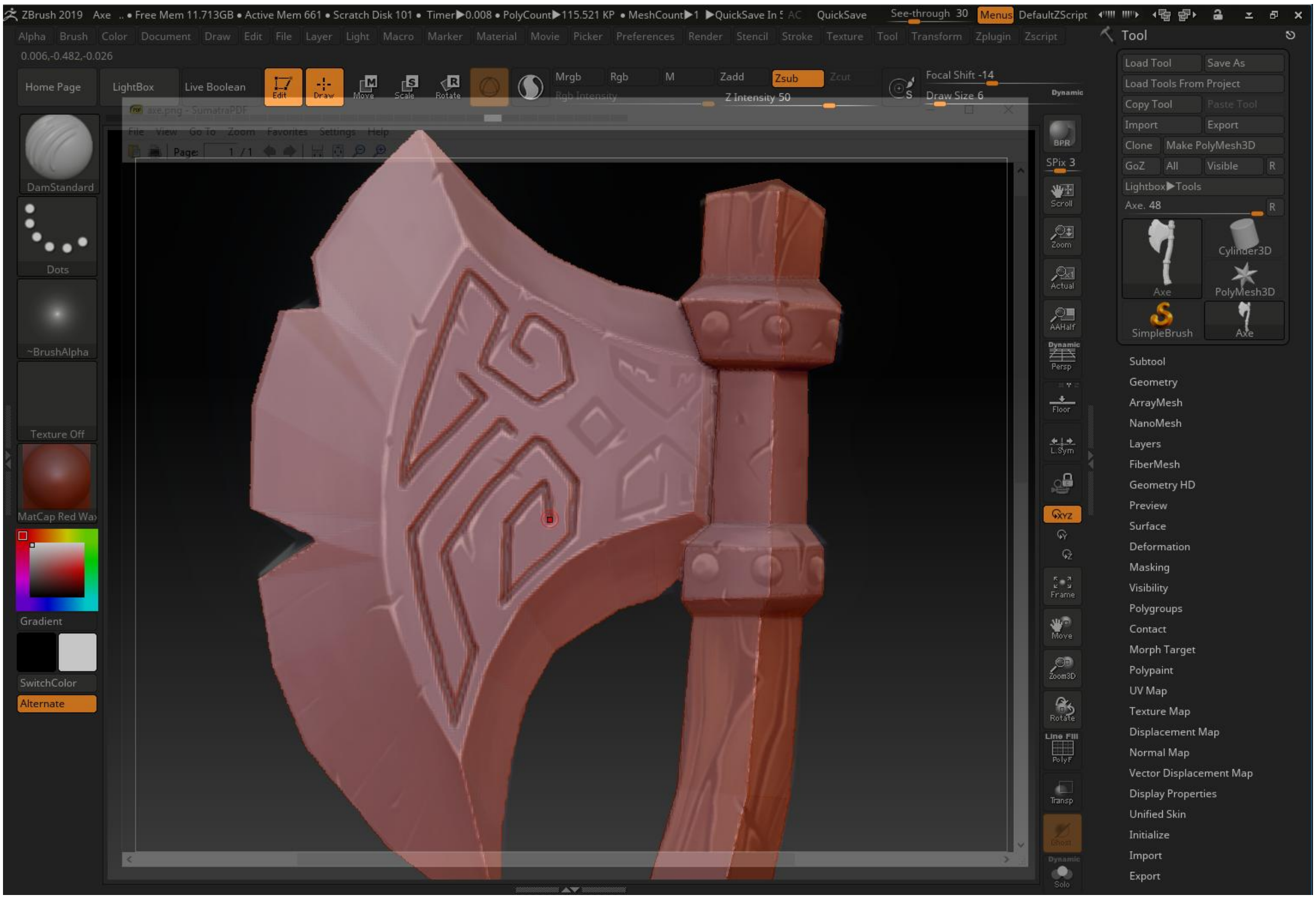
选笔刷 → DamStandard



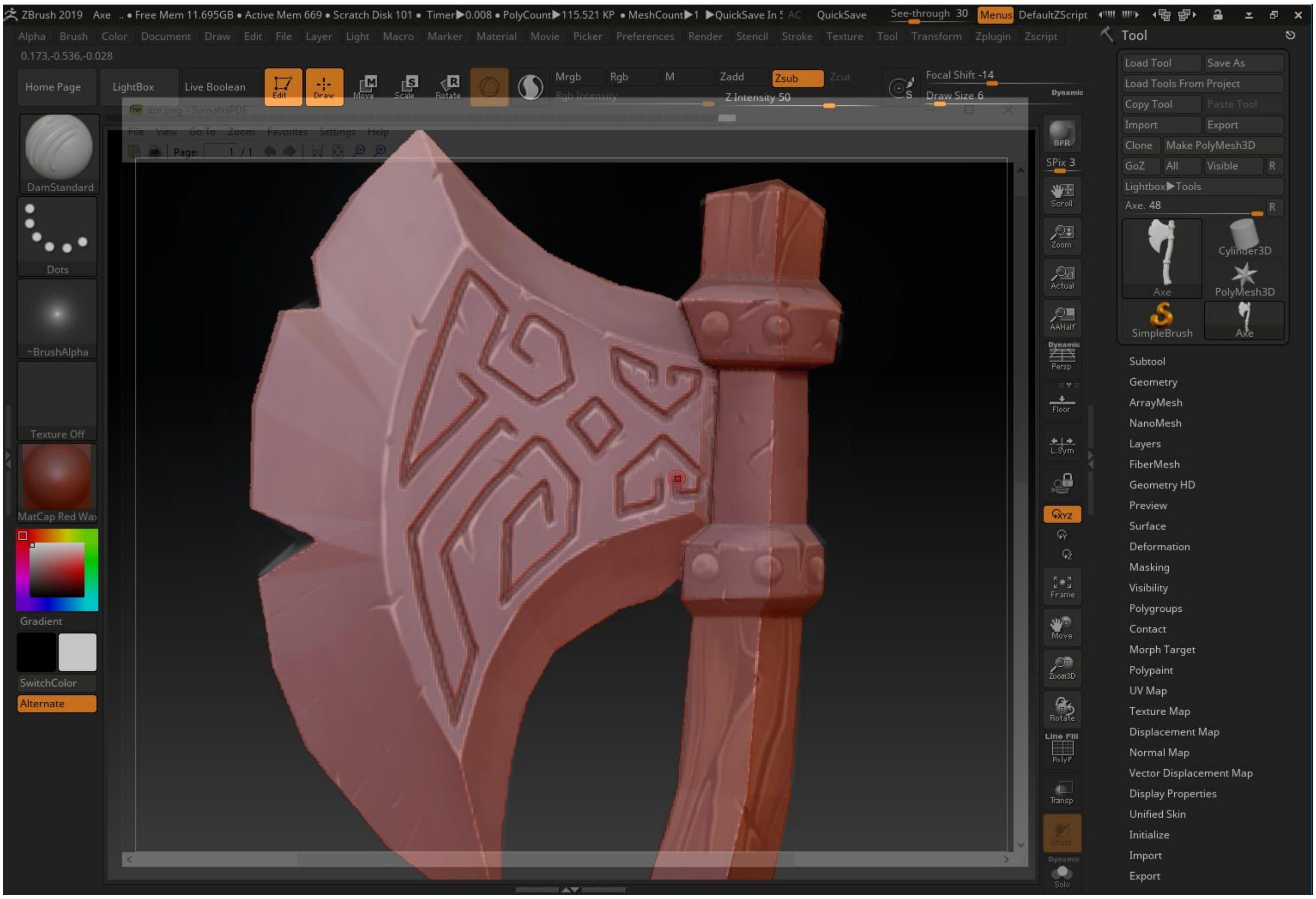
调整大小，然后你可以开始试试画



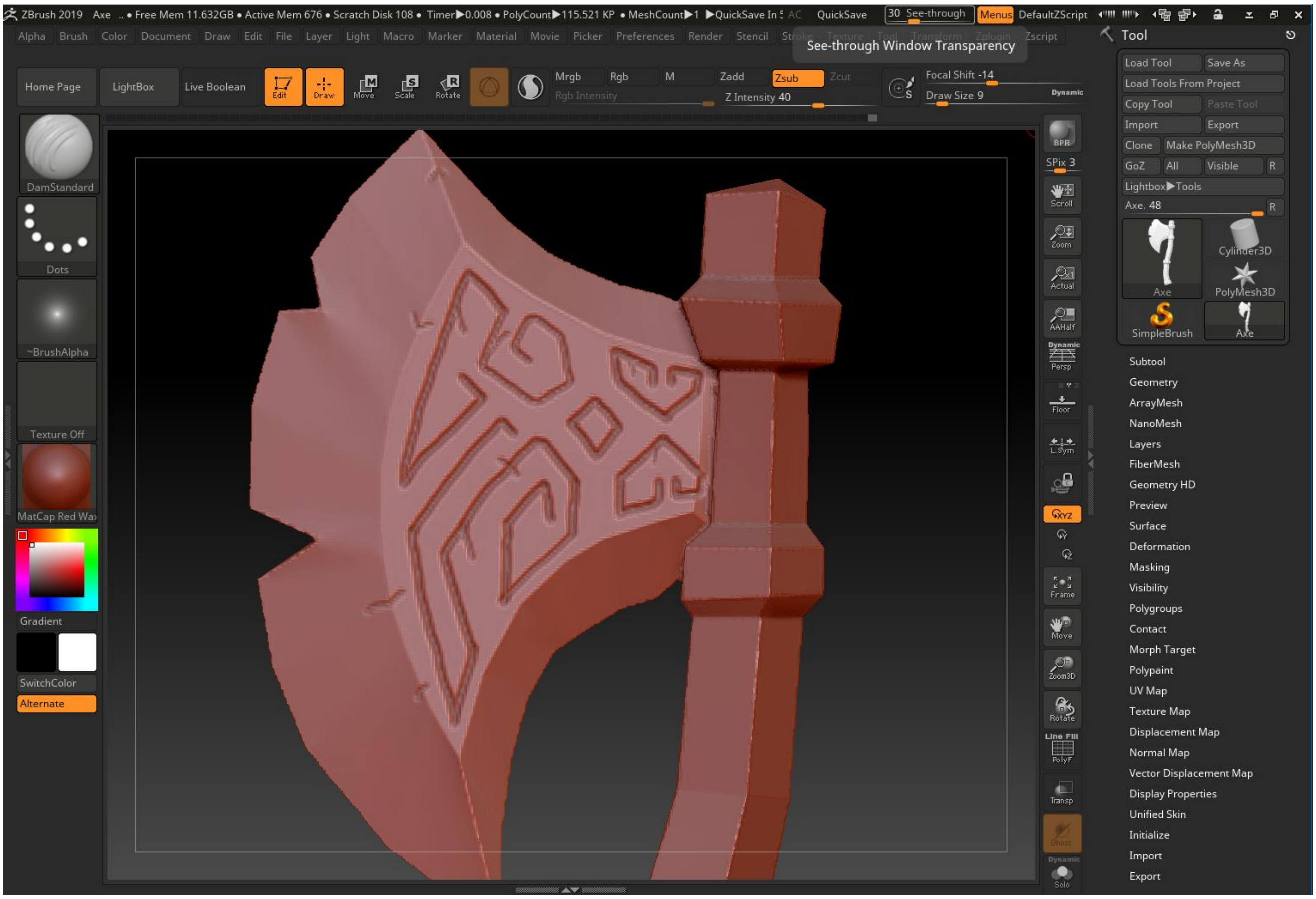
在画的过程...



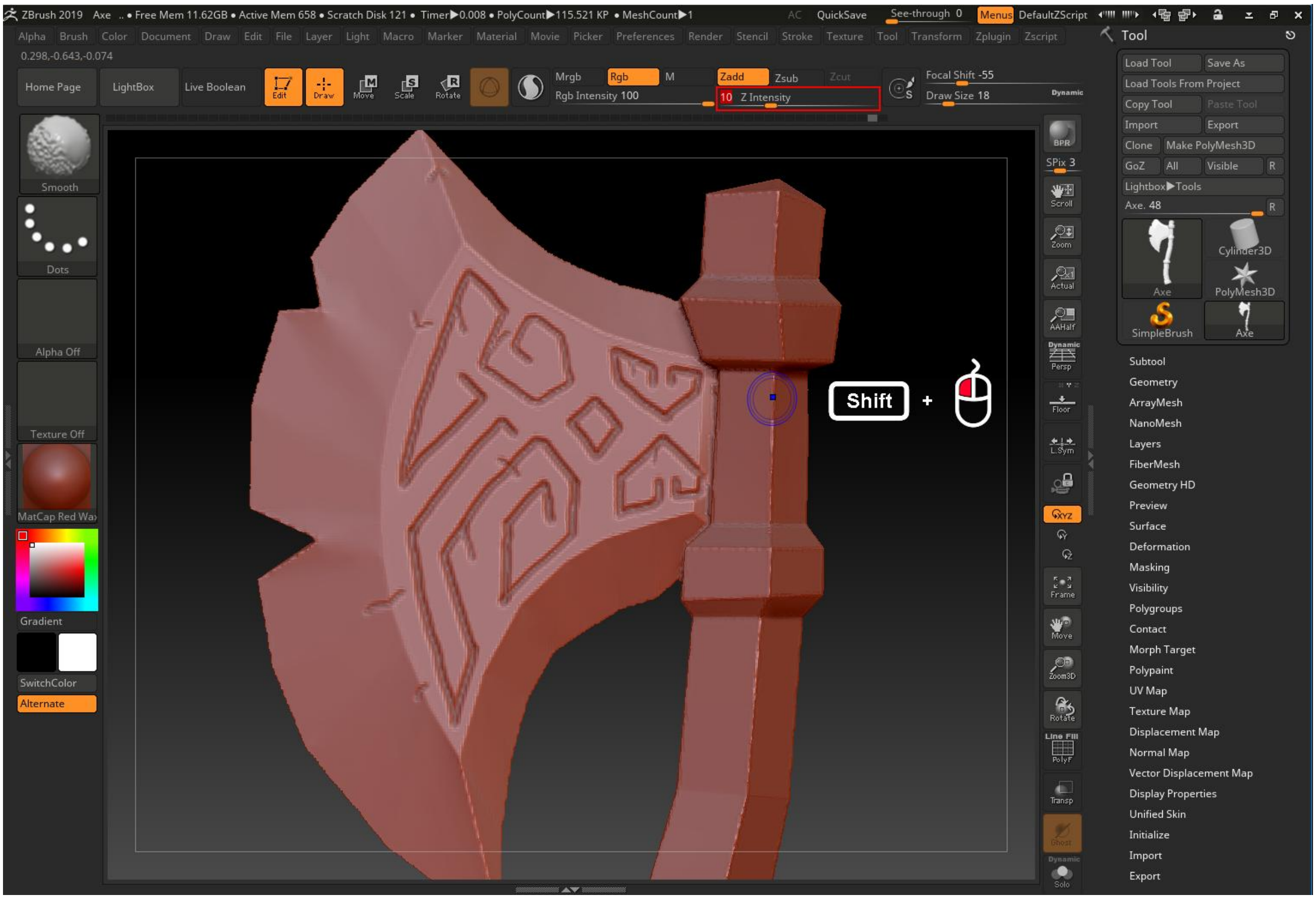
重复同样的步骤，把斧头表面画完



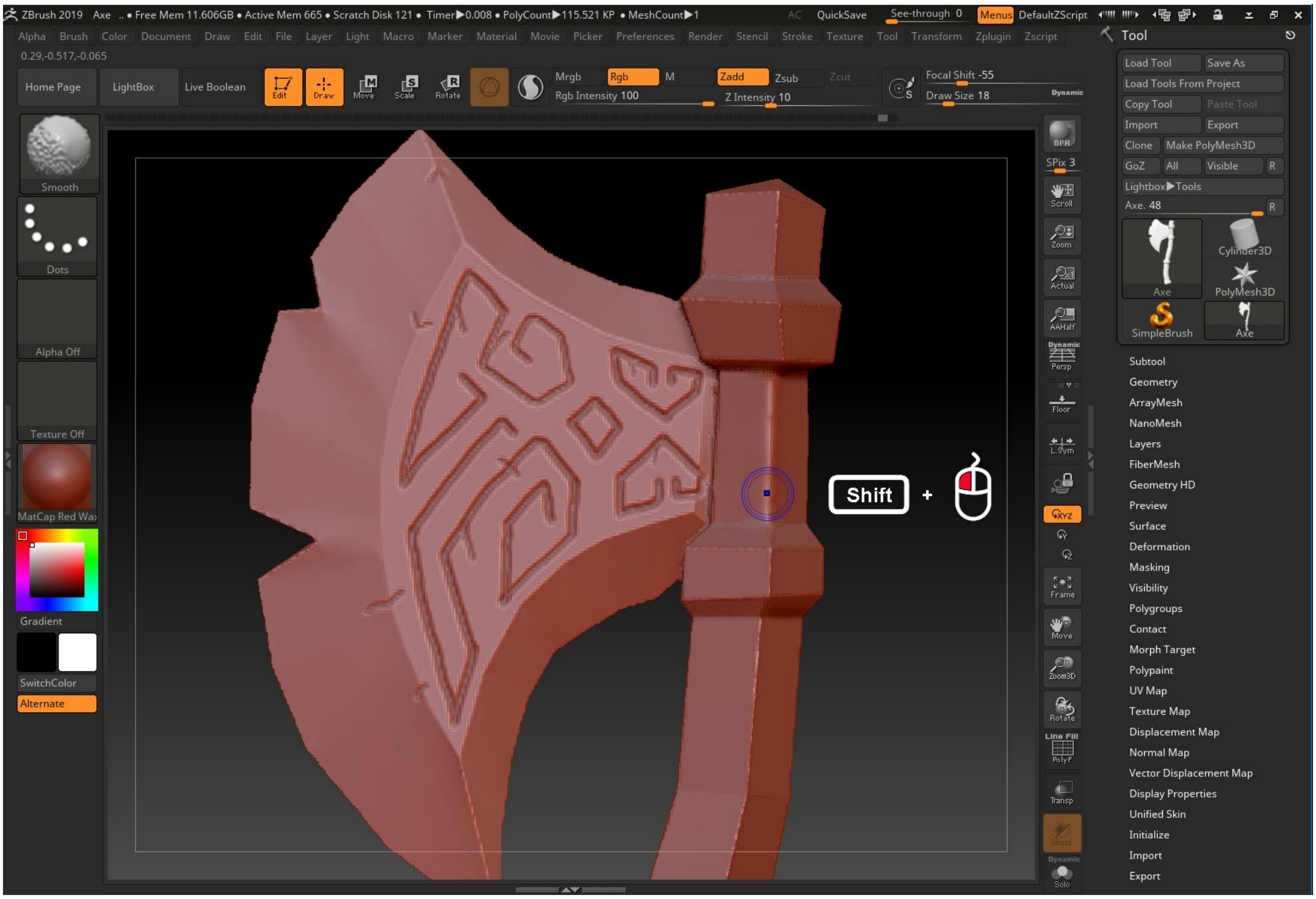
也可以添加斧头刮伤，和其他细节部分



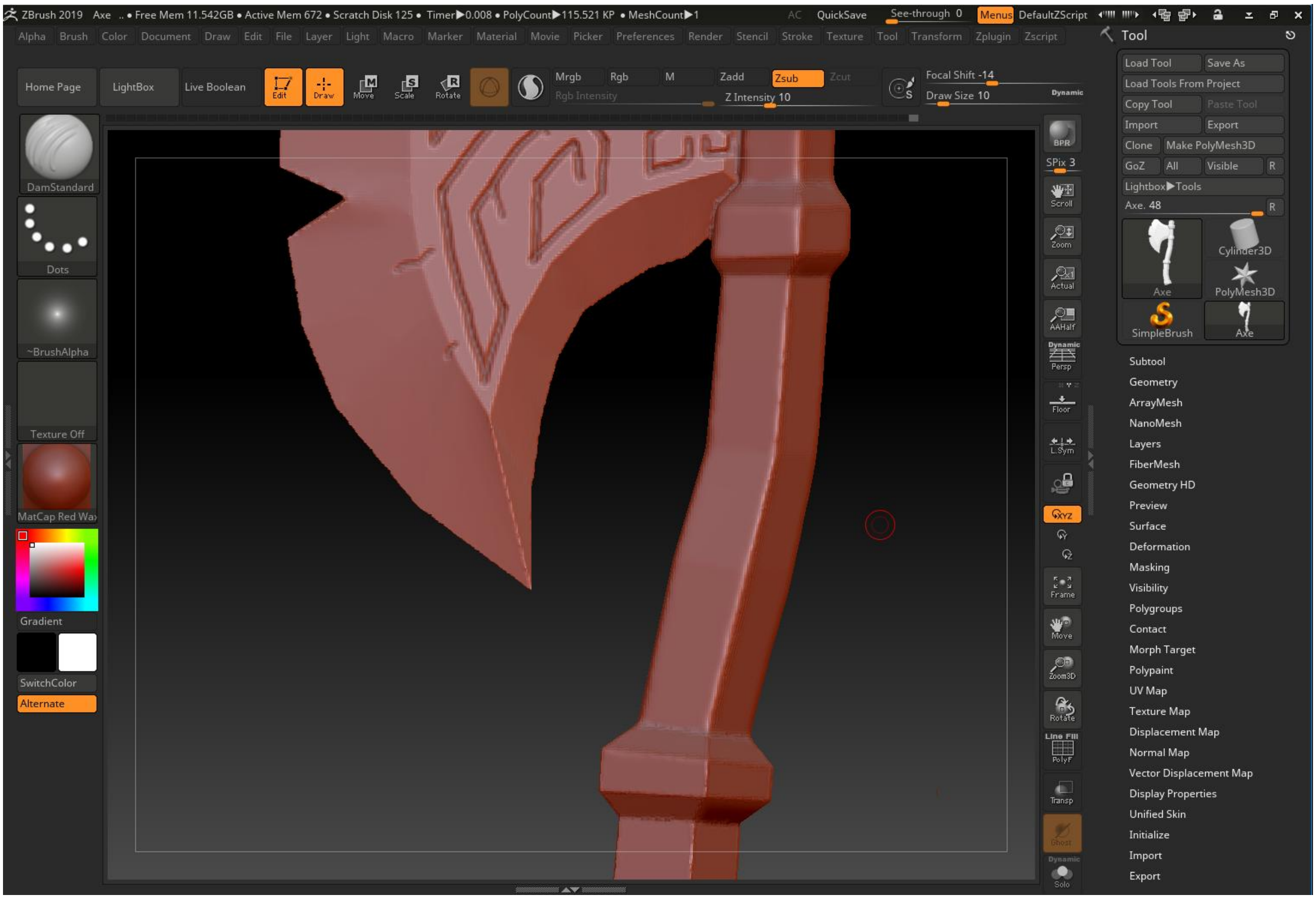
按着 Shift 把边角的部分光滑，记得确保 Z Intensity: 10



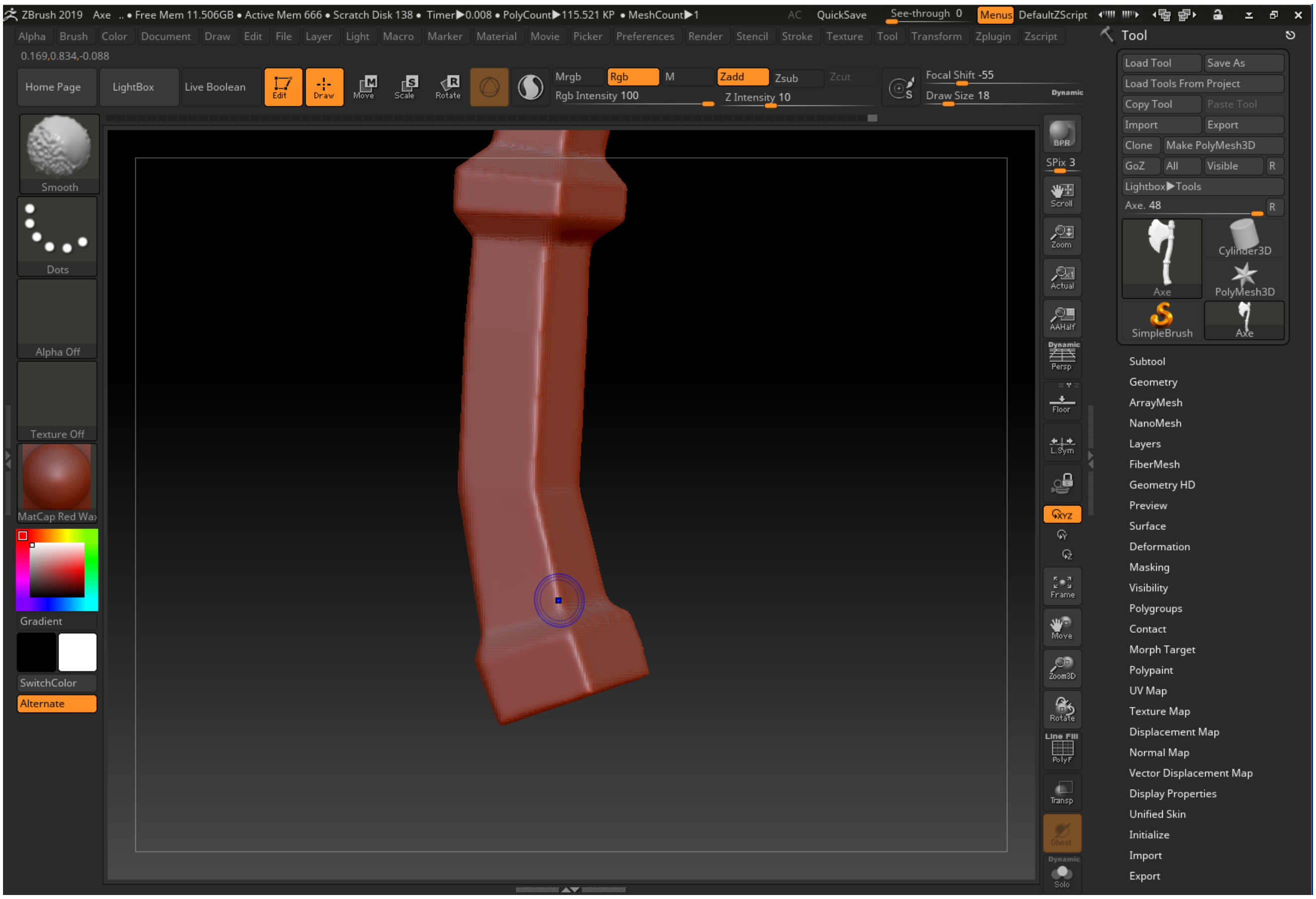
现在看起来比较光滑了



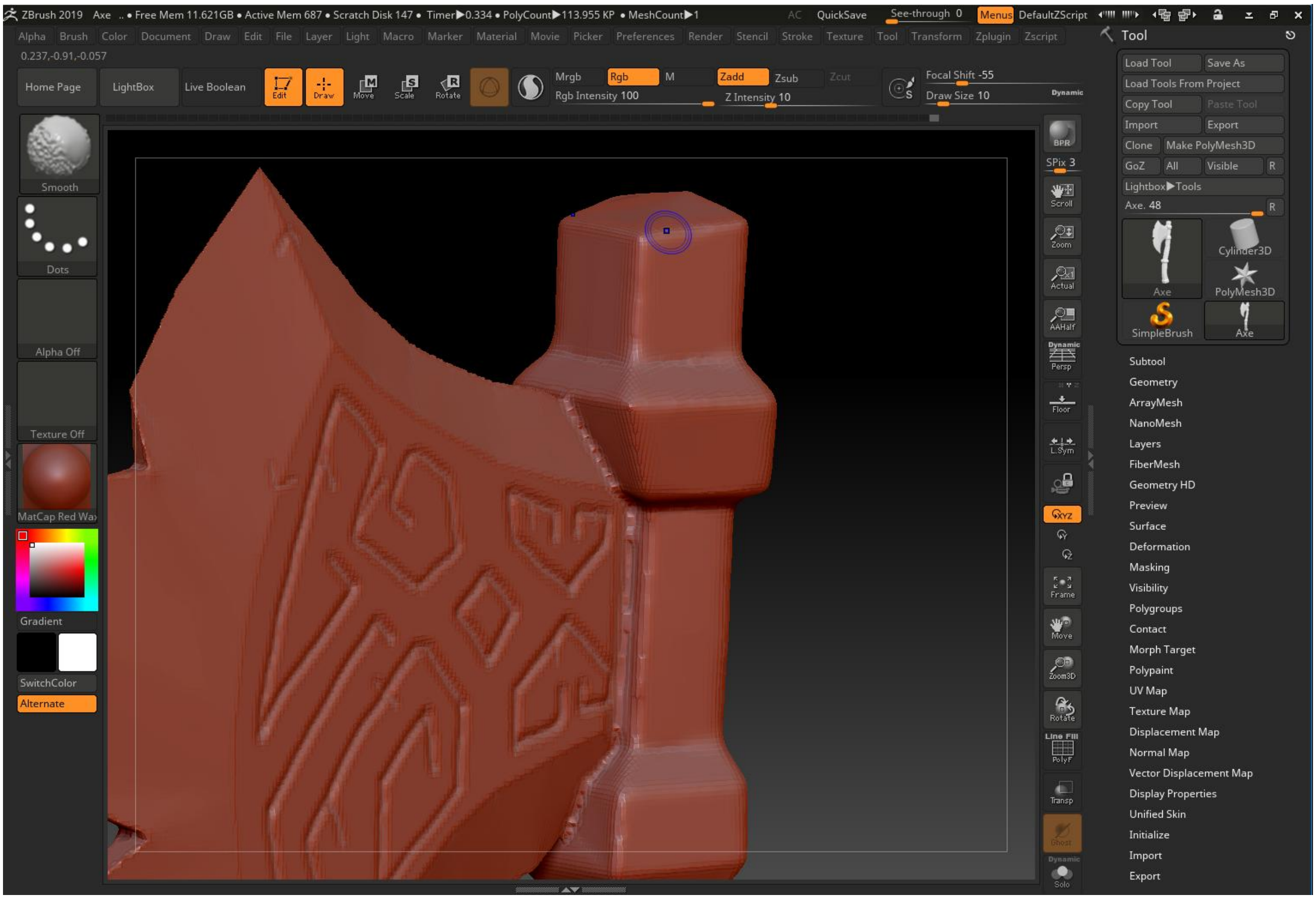
同样的方式，按着 Shift，也把其他部分弄光滑



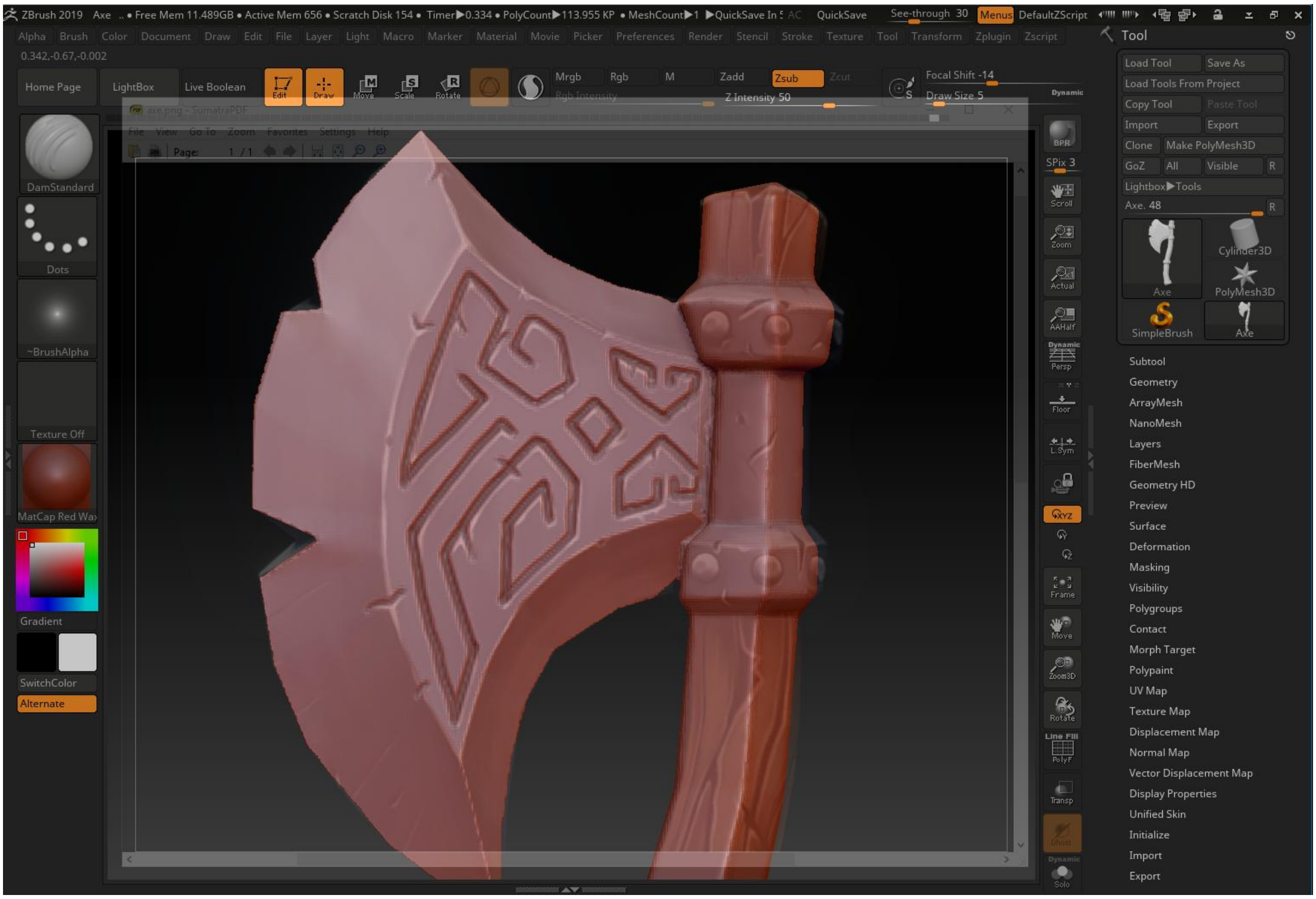
顺便把斧头的握把也光滑

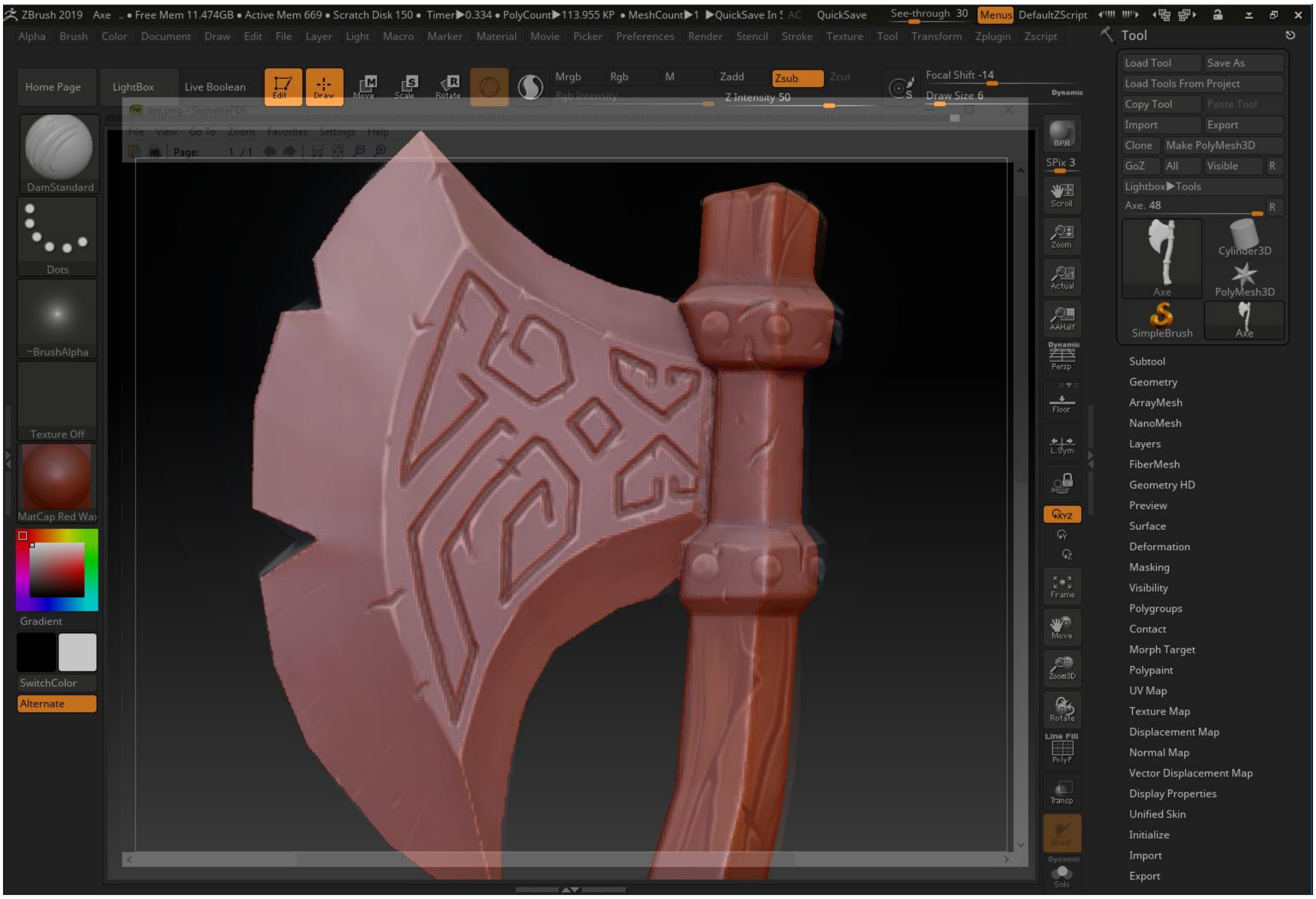


不要忘了上面的部分也弄光滑一下

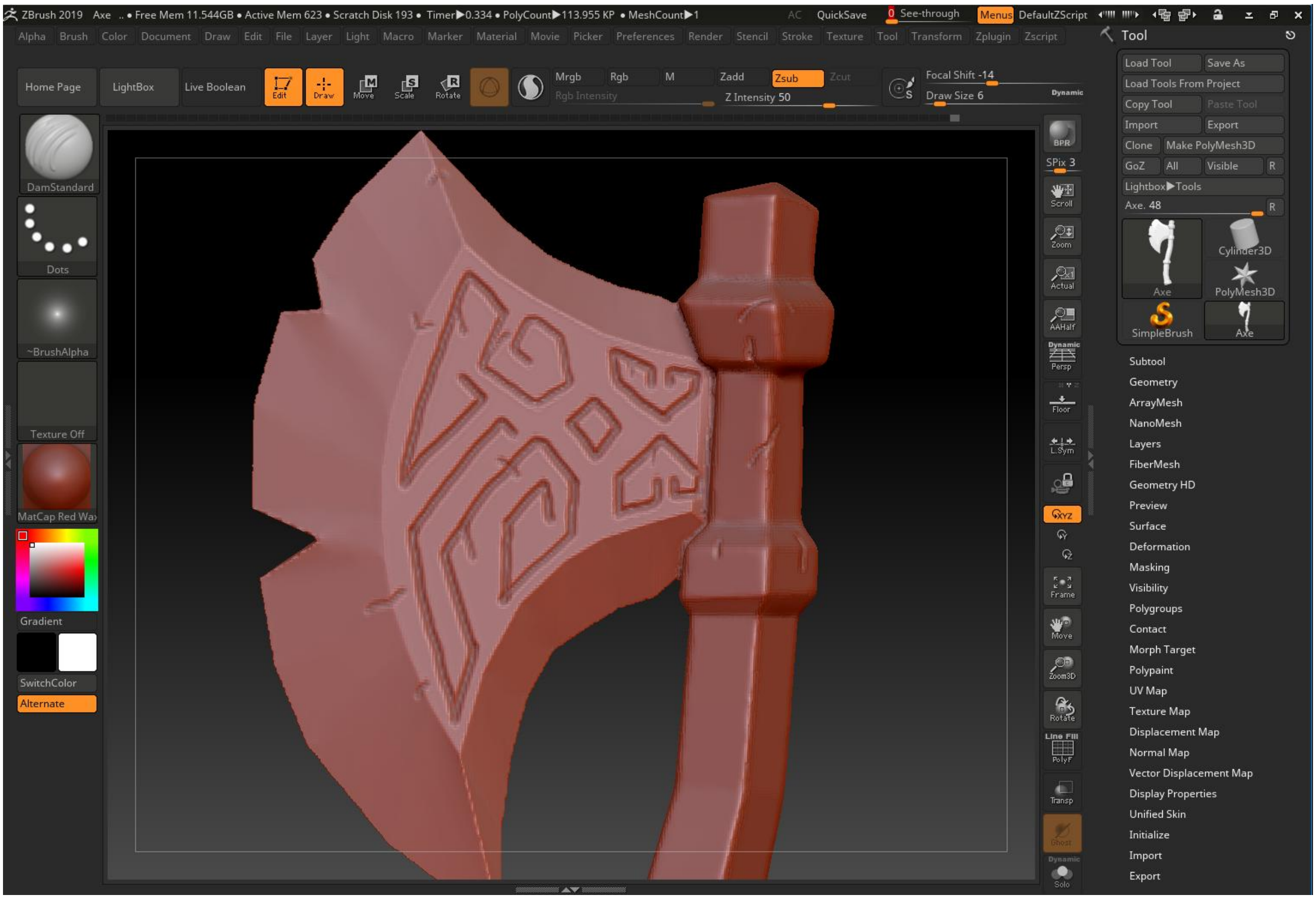


我们也要在其他部分弄金属刮伤表面

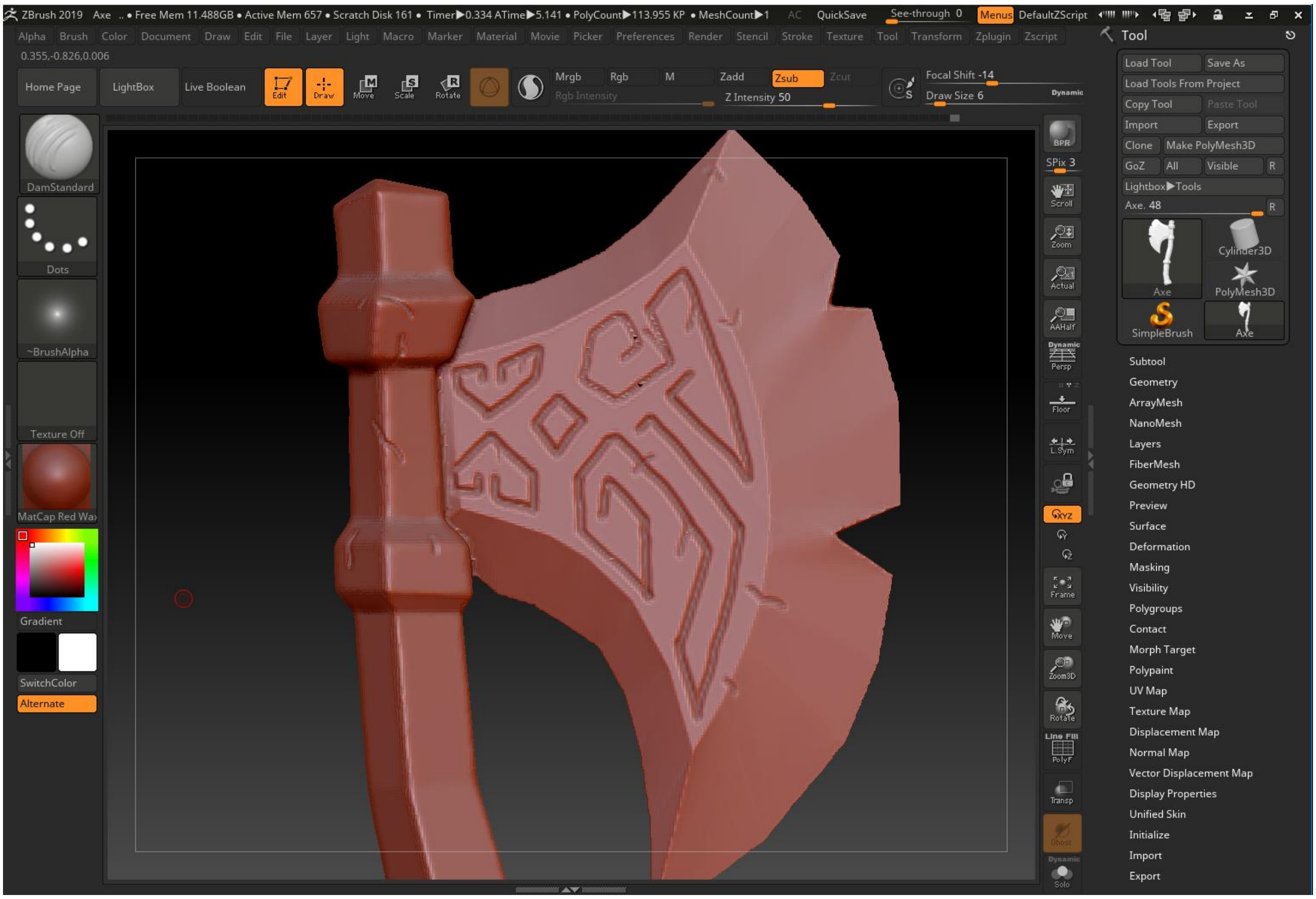




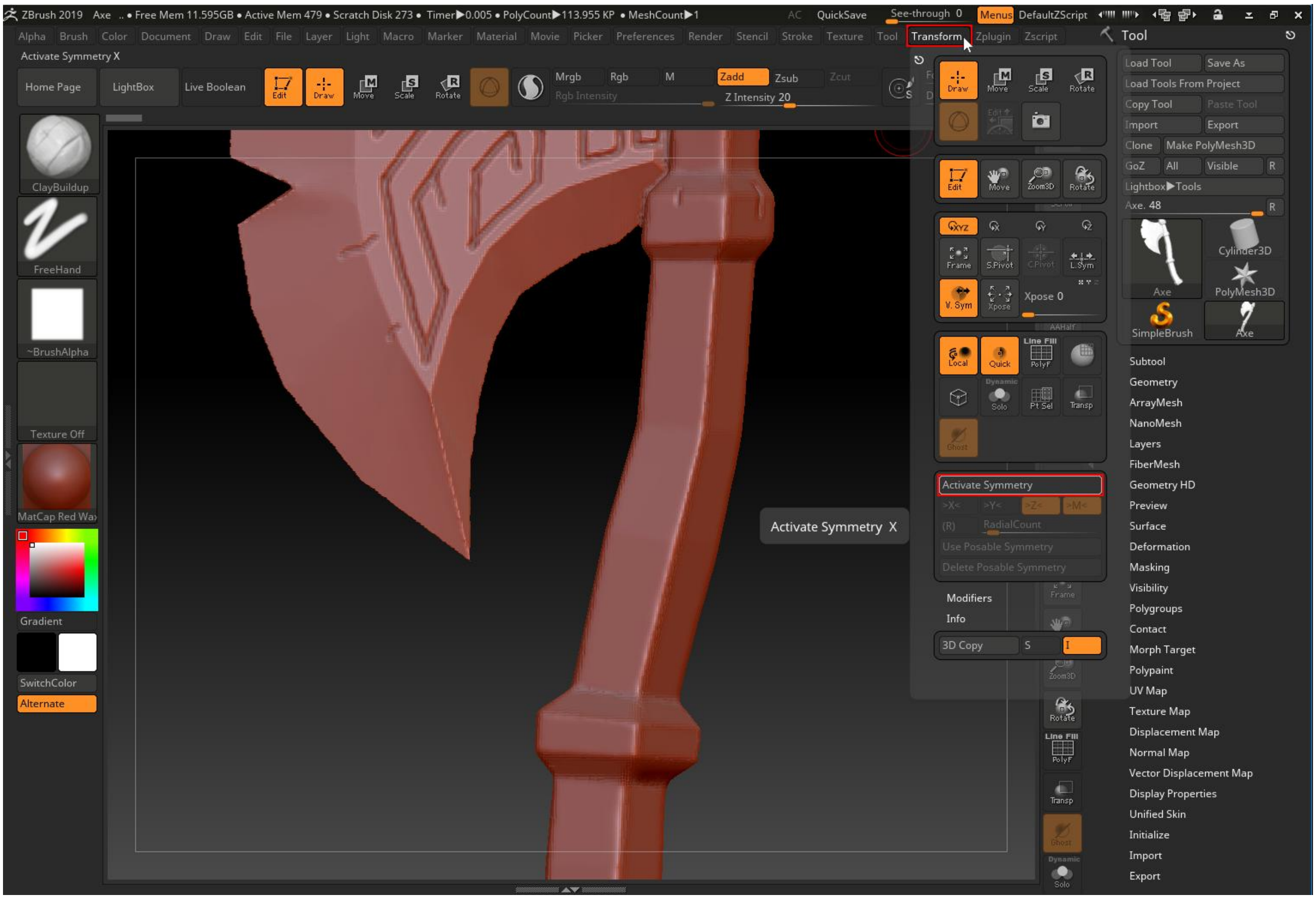
完成了



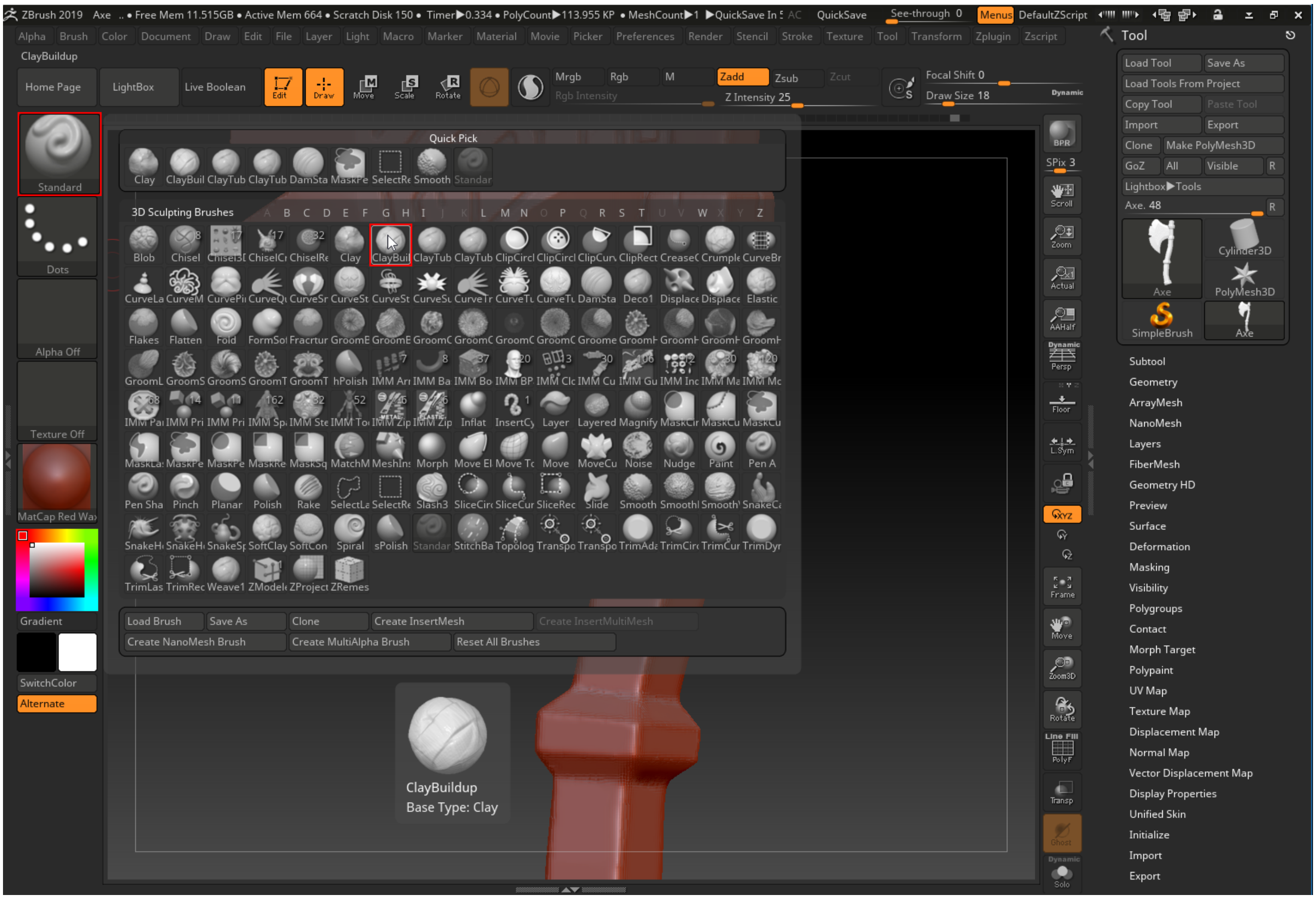
检查后面，就可以看到同样已经画完了，这就是为什么要开 Symmetry



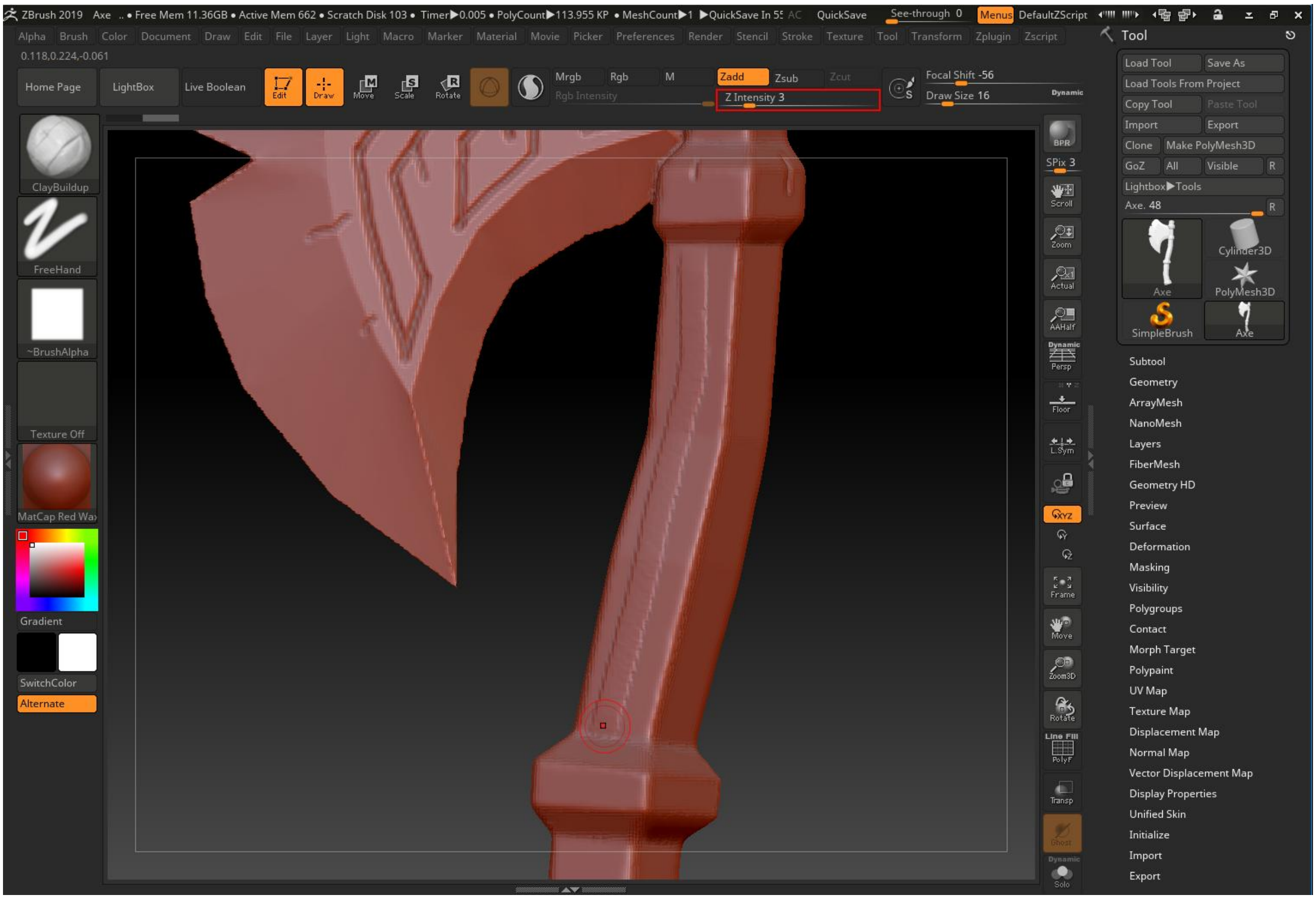
现在可以关掉 Symmetry



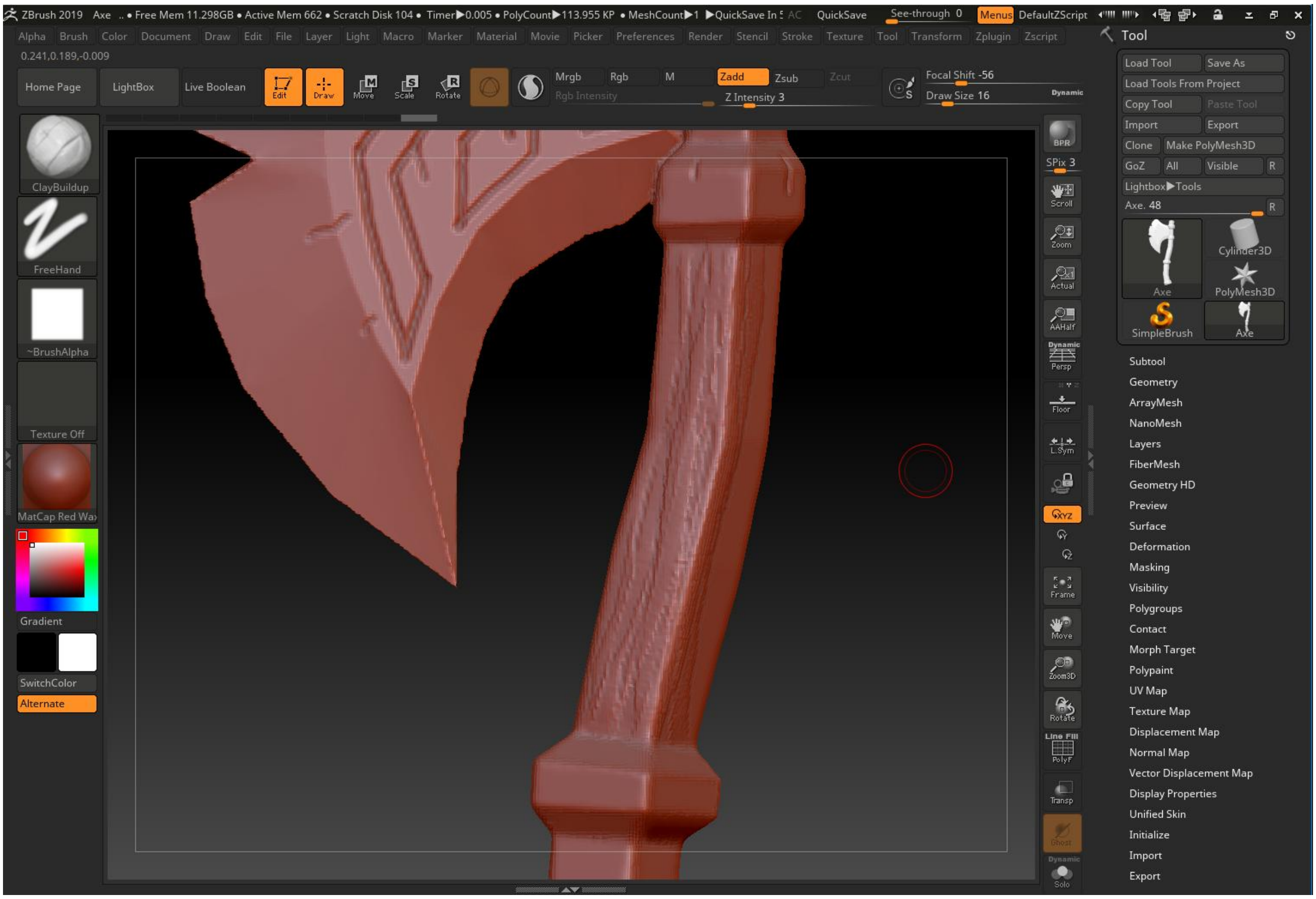
选笔刷 → ClayBuildup



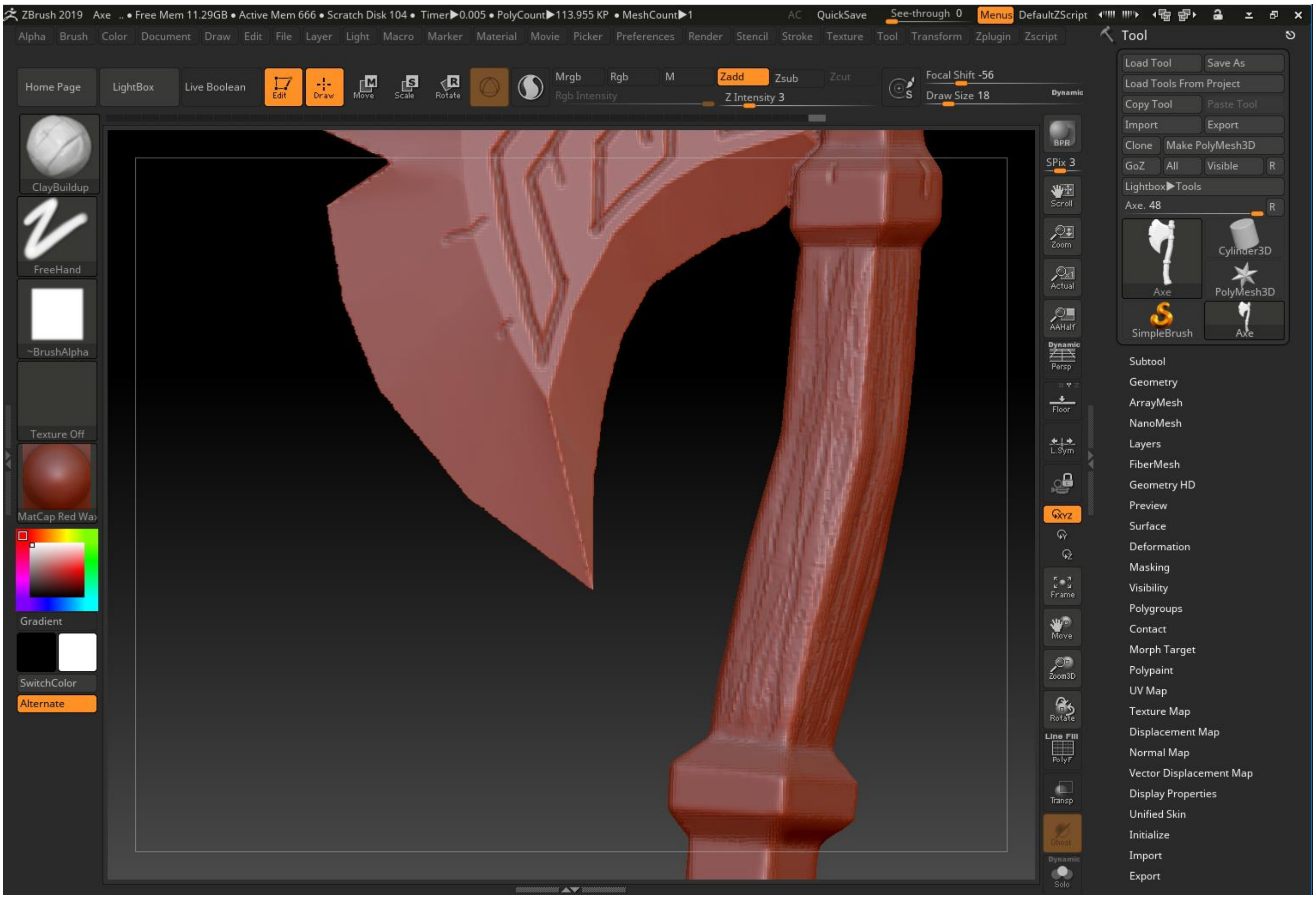
调整 Z Intensity: 3 ， 然后画木头凹凸的表面



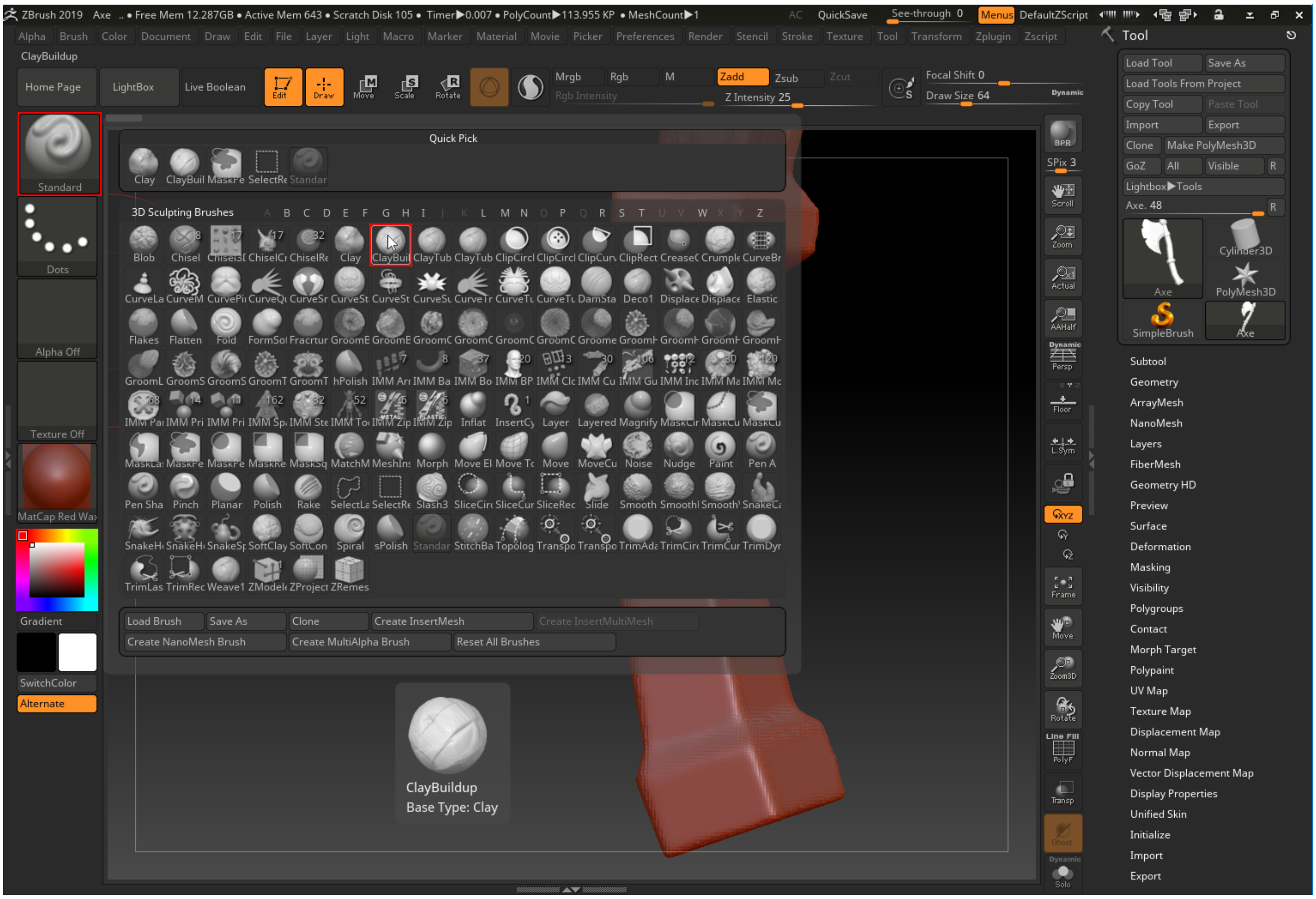
重复同样的画，把木头的凹凸画出来



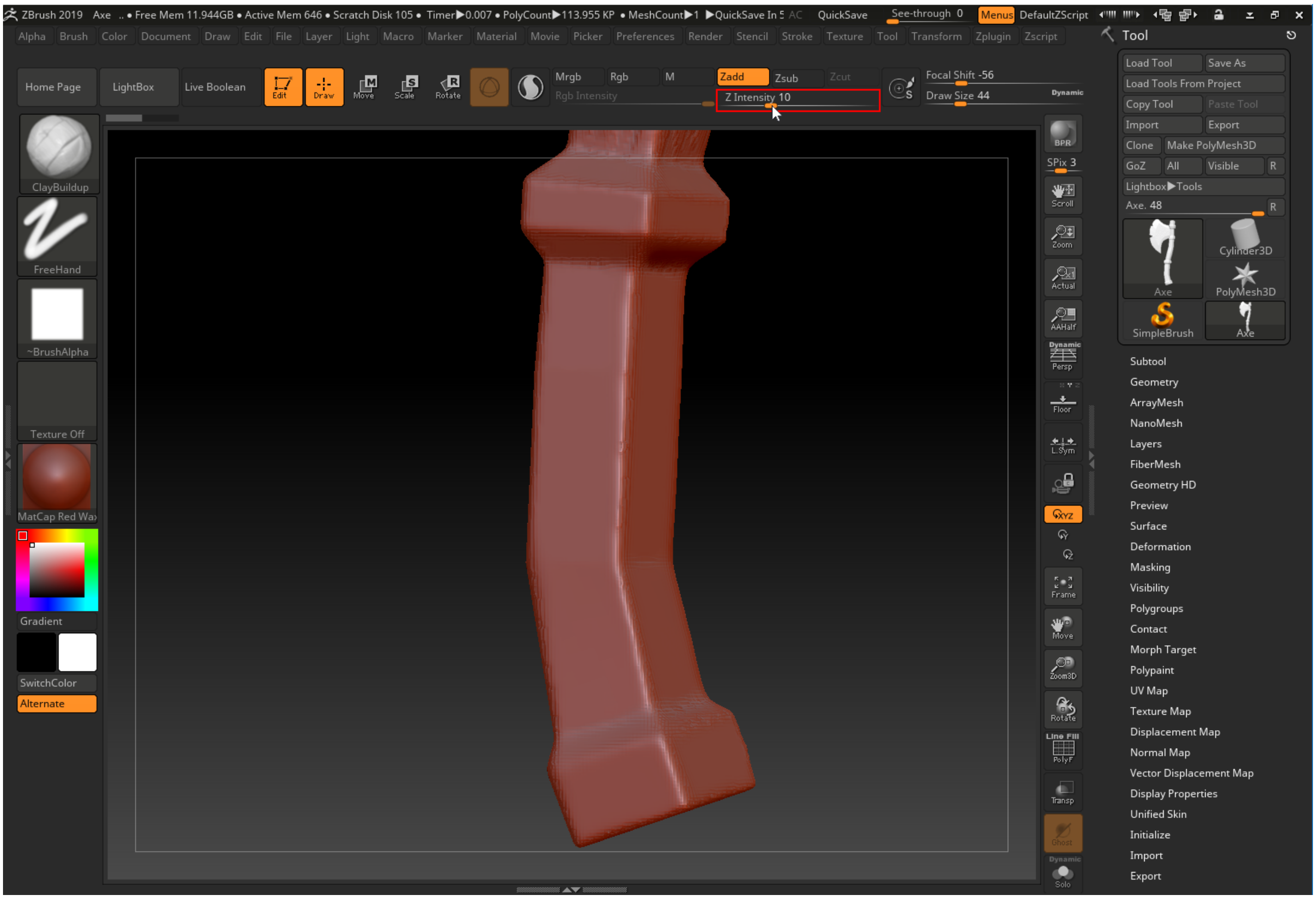
完成了



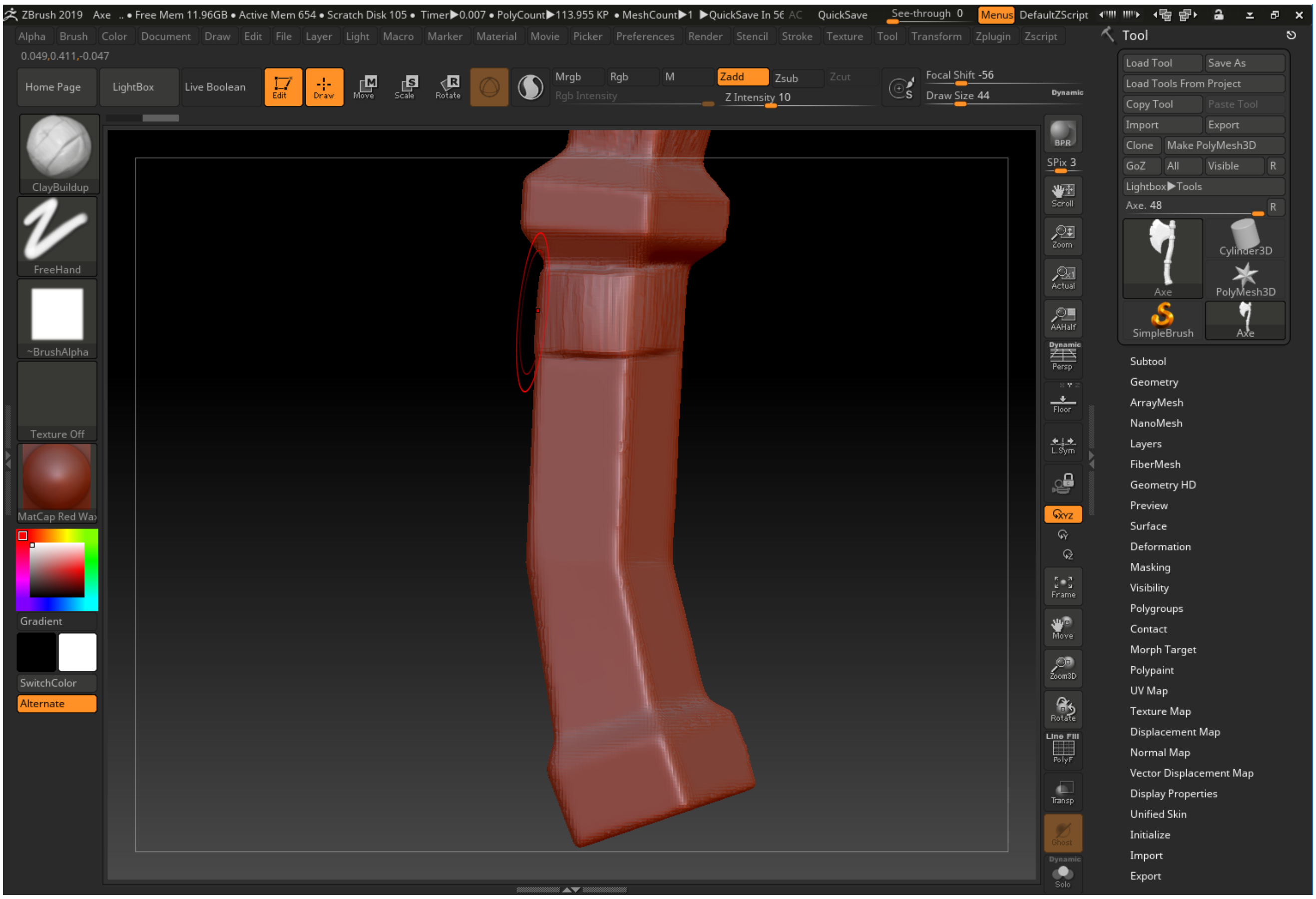
我们再用 ClayBuildup 来画握把的部分



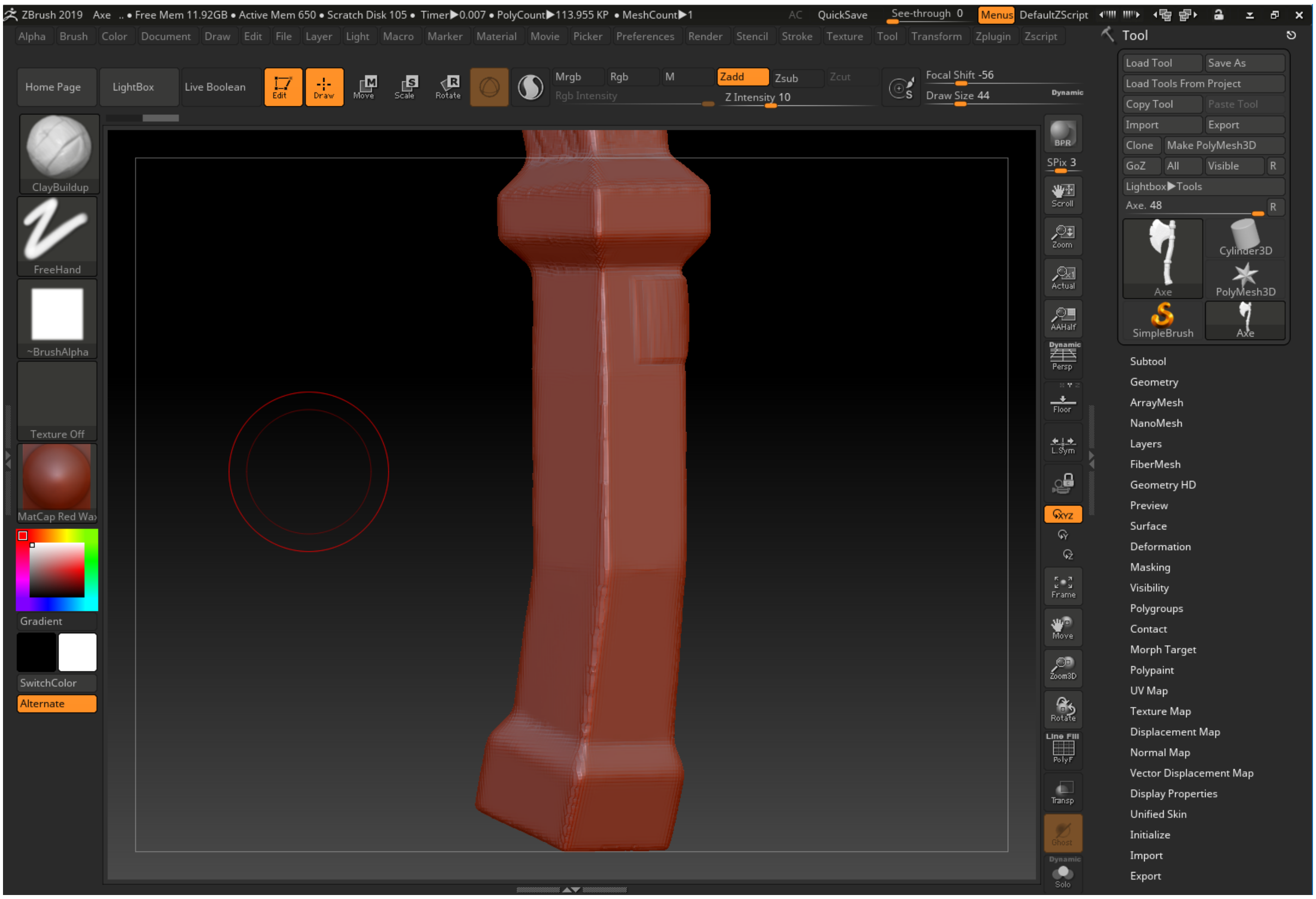
调整 Z Intensity: 10



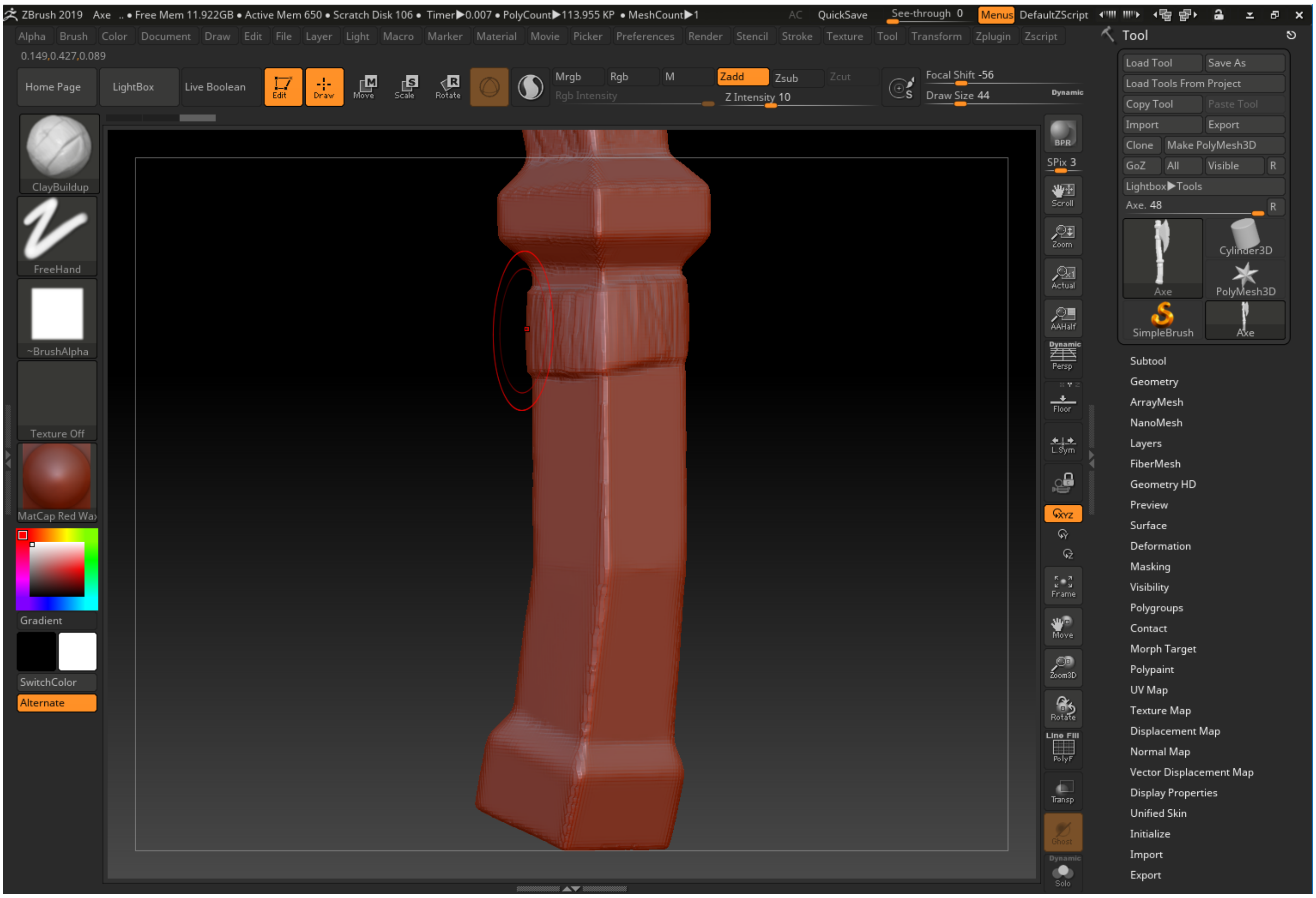
我们现在画，就像把布条包着手把



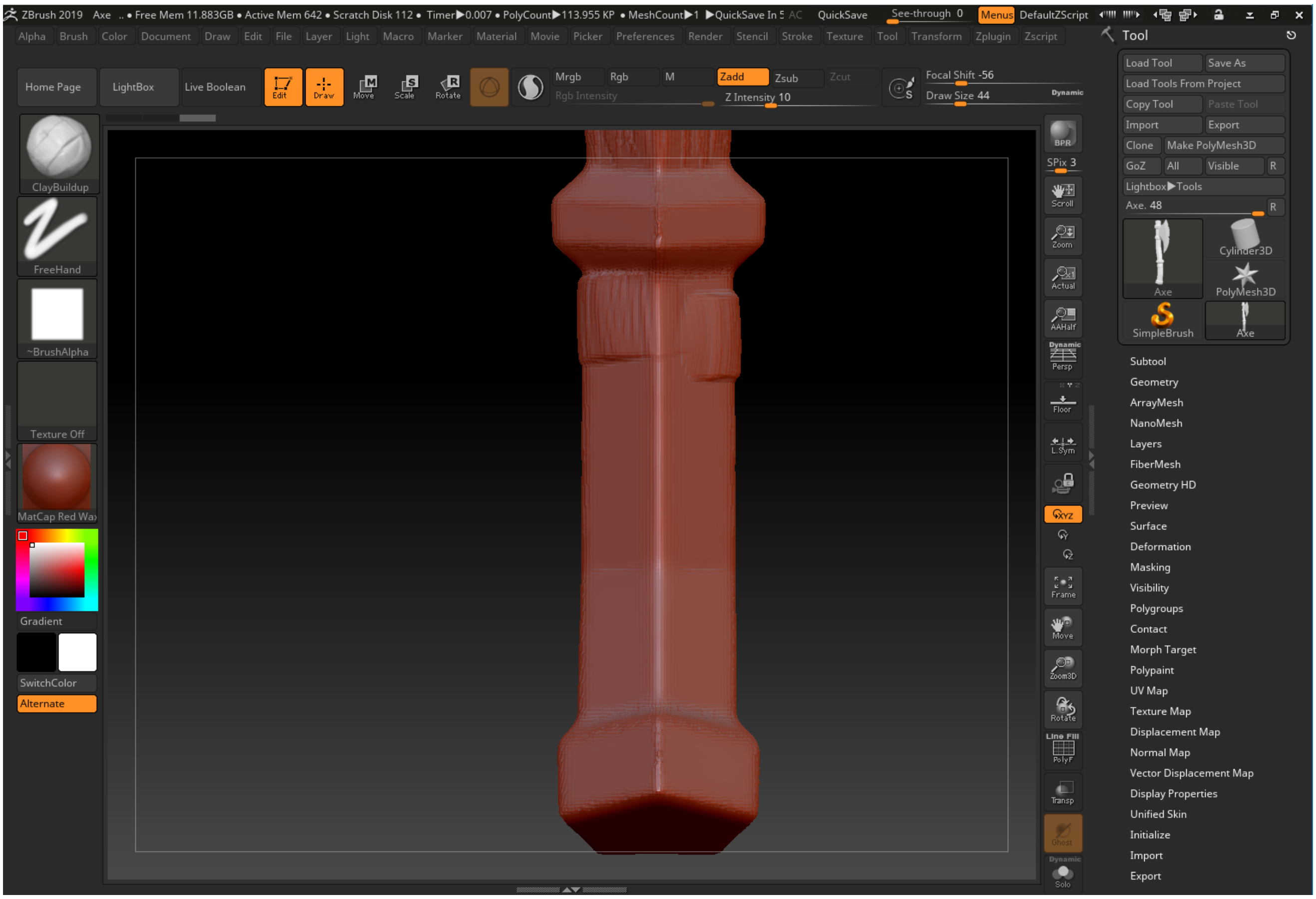
旋转

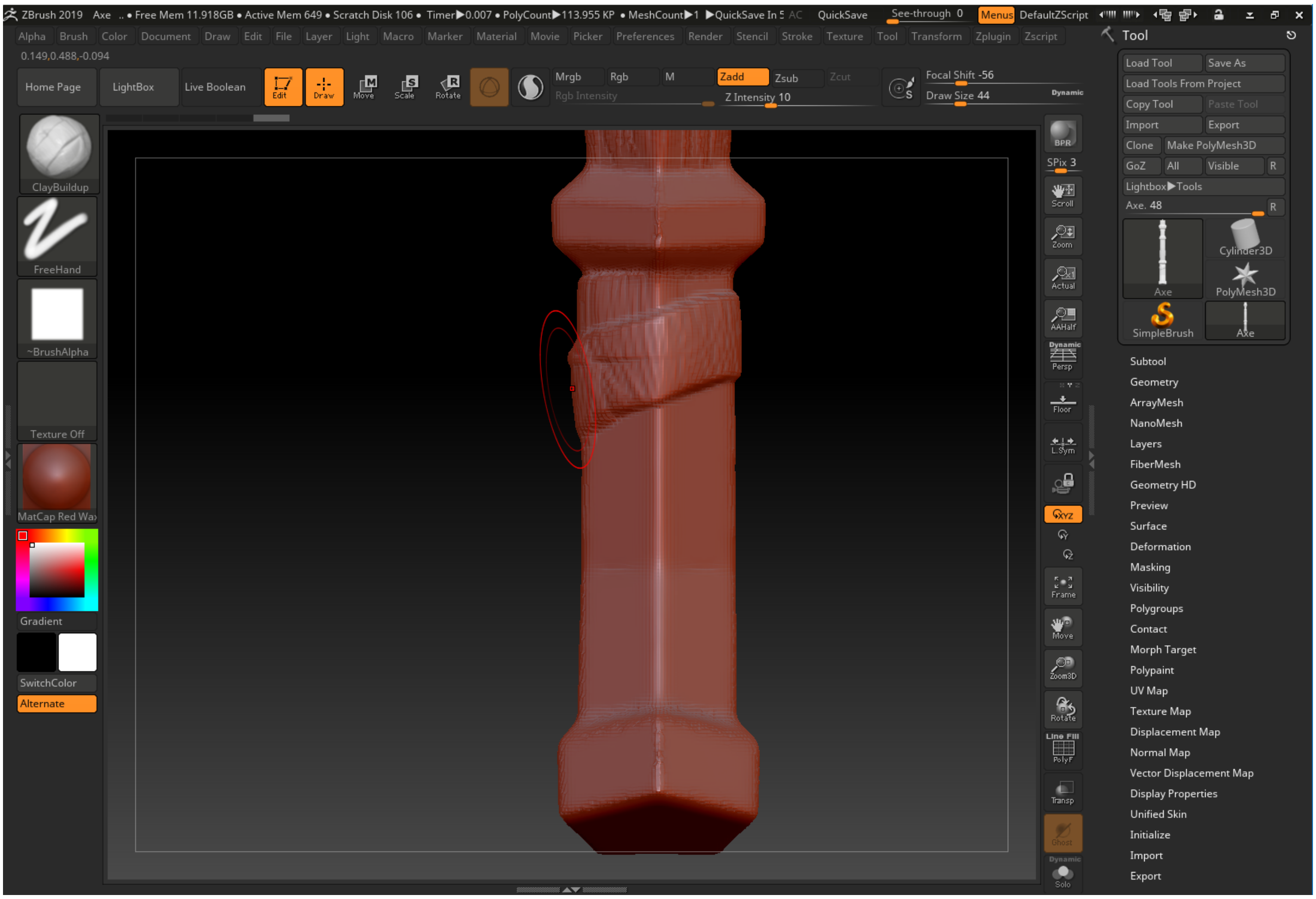

ZBrush 2019 Axe .. • Free Mem 11.92GB • Active Mem 650 • Scratch Disk 105 • Timer▶0.007 • PolyCount▶113.955 KP • MeshCount▶1
AC QuickSave See-through 0 Menus DefaultZScript
Alpha Brush Color Document Draw Edit File Layer Light Macro Marker Material Movie Picker Preferences Render Stencil Stroke Texture Tool Transform Zplugin Zscript
Tool
Home Page LightBox Live Boolean Edit Draw Move Scale Rotate
Mrgb Rgb M Zadd Zsub Zcut
Rgb Intensity
Z Intensity 10
Focal Shift -56
Draw Size 44
Dynamic
ClayBuildup
FreeHand
~BrushAlpha
Texture Off
MatCap Red Wax
Gradient
SwitchColor
Alternate
BPR
SPix 3
Scroll
Zoom
Actual
AAHalf
Persp
Floor
L.Sym
Frame
Move
Zoom3D
Rotate
Line Fill
PolyF
Transp
Ghost
Solo
Load Tool Save As
Load Tools From Project
Copy Tool Paste Tool
Import Export
Clone Make PolyMesh3D
GoZ All Visible R
Lightbox▶Tools
Axe. 48 R
Axe
Cylinder3D
PolyMesh3D
SimpleBrush
Subtool
Geometry
ArrayMesh
NanoMesh
Layers
FiberMesh
Geometry HD
Preview
Surface
Deformation
Masking
Visibility
Polygroups
Contact
Morph Target
Polypaint
UV Map
Texture Map
Displacement Map
Normal Map
Vector Displacement Map
Display Properties
Unified Skin
Initialize
Import
Export

继续画

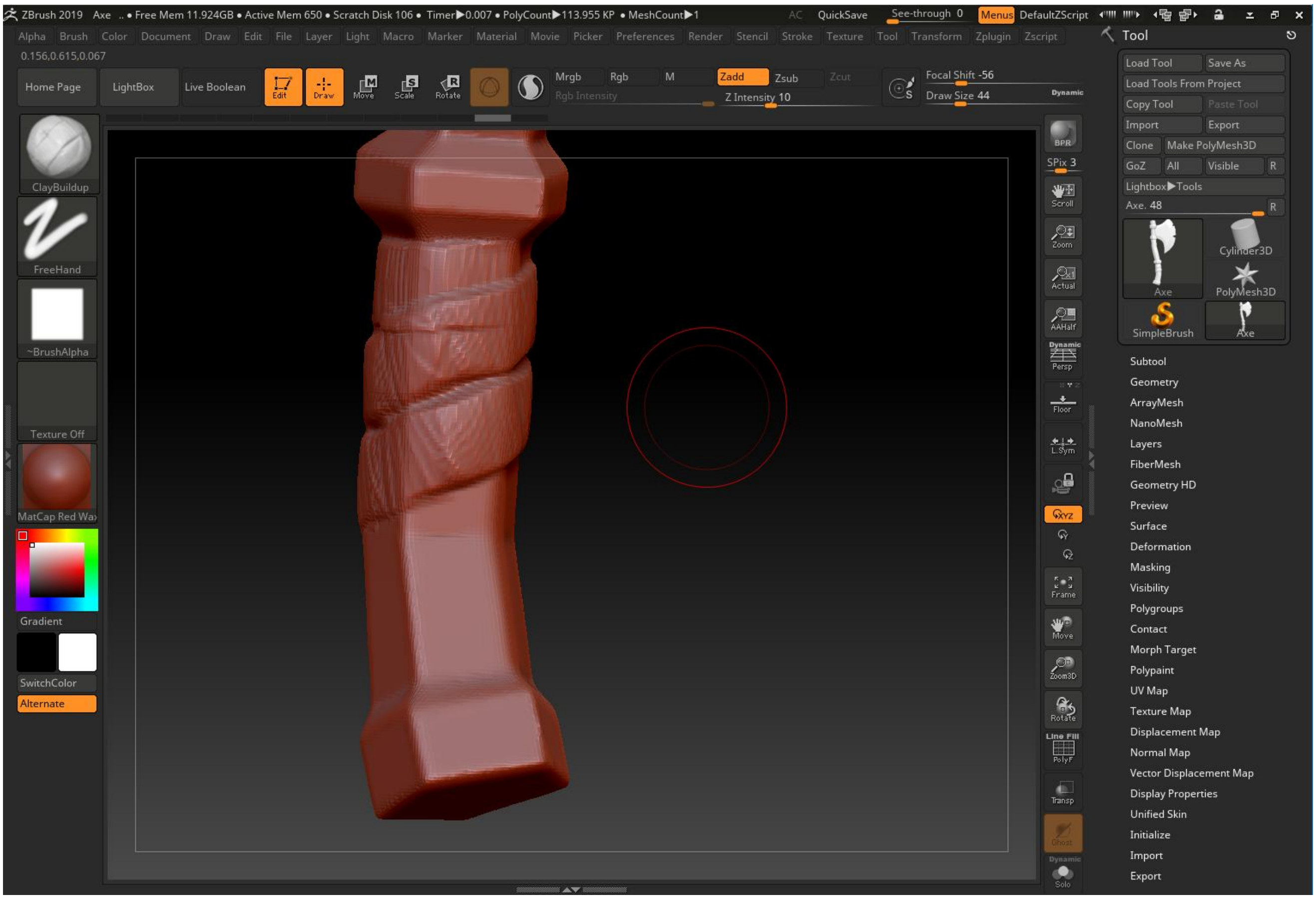

ZBrush 2019 Axe .. • Free Mem 11.922GB • Active Mem 650 • Scratch Disk 106 • Timer▶0.007 • PolyCount▶113.955 KP • MeshCount▶1
AC QuickSave See-through 0 Menus DefaultZScript
Alpha Brush Color Document Draw Edit File Layer Light Macro Marker Material Movie Picker Preferences Render Stencil Stroke Texture Tool Transform Zplugin Zscript
Tool
0.149,0.427,0.089
Home Page LightBox Live Boolean Edit Draw Move Scale Rotate
Mrgb Rgb M Zadd Zsub Zcut
Rgb Intensity
Z Intensity 10
Focal Shift -56
Draw Size 44
Dynamic
ClayBuildup
FreeHand
~BrushAlpha
Texture Off
MatCap Red Wax
Gradient
SwitchColor
Alternate
BPR
SPix 3
Scroll
Zoom
Actual
AAHalf
Persp
Floor
L.Sym
Frame
Move
Zoom3D
Rotate
Line Fill
PolyF
Transp
Ghost
Solo
Load Tool Save As
Load Tools From Project
Copy Tool Paste Tool
Import Export
Clone Make PolyMesh3D
GoZ All Visible R
Lightbox▶Tools
Axe. 48 R
Axe
Cylinder3D
PolyMesh3D
SimpleBrush
Subtool
Geometry
ArrayMesh
NanoMesh
Layers
FiberMesh
Geometry HD
Preview
Surface
Deformation
Masking
Visibility
Polygroups
Contact
Morph Target
Polypaint
UV Map
Texture Map
Displacement Map
Normal Map
Vector Displacement Map
Display Properties
Unified Skin
Initialize
Import
Export

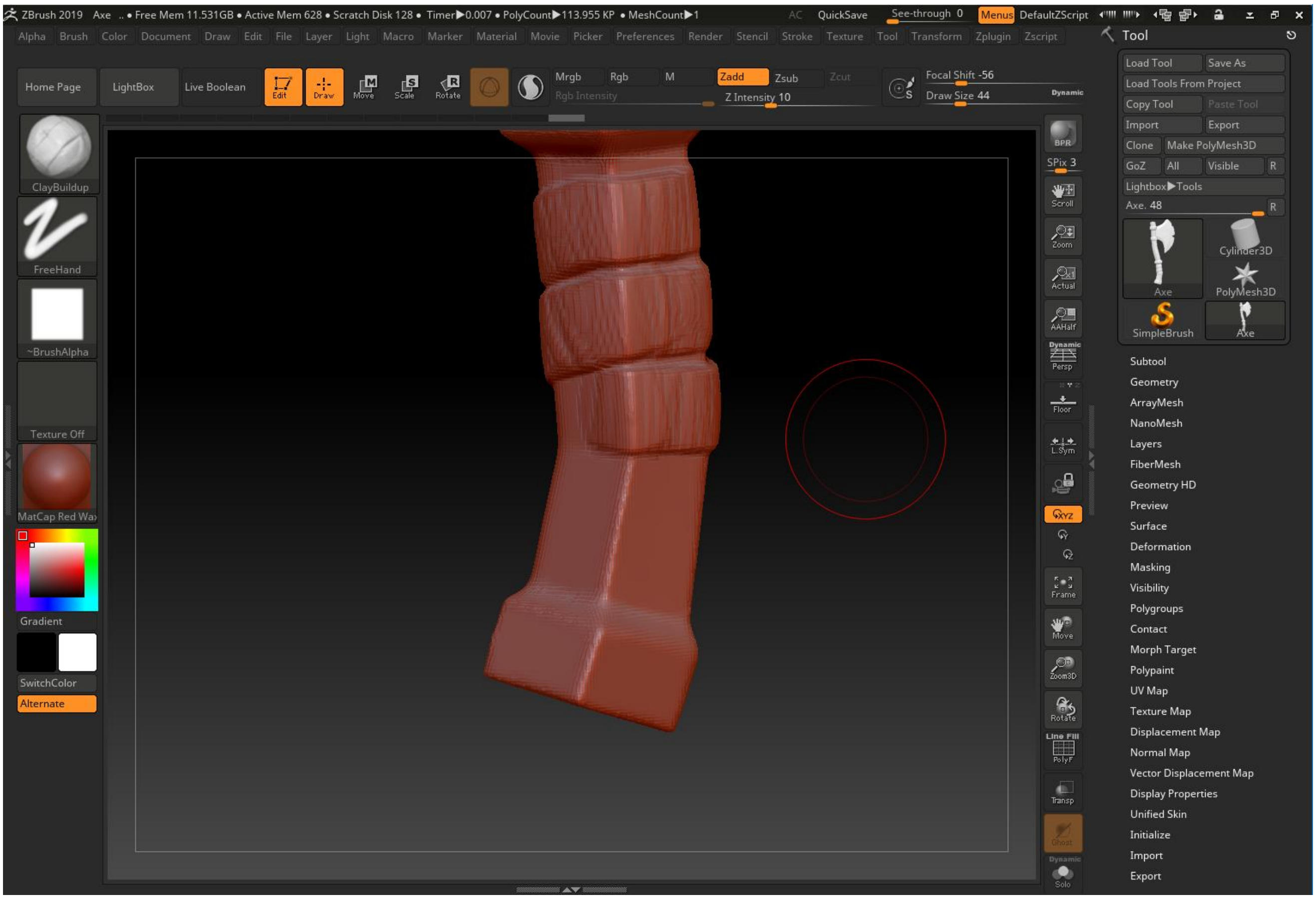
重复同样的步骤，一直旋转和画出来



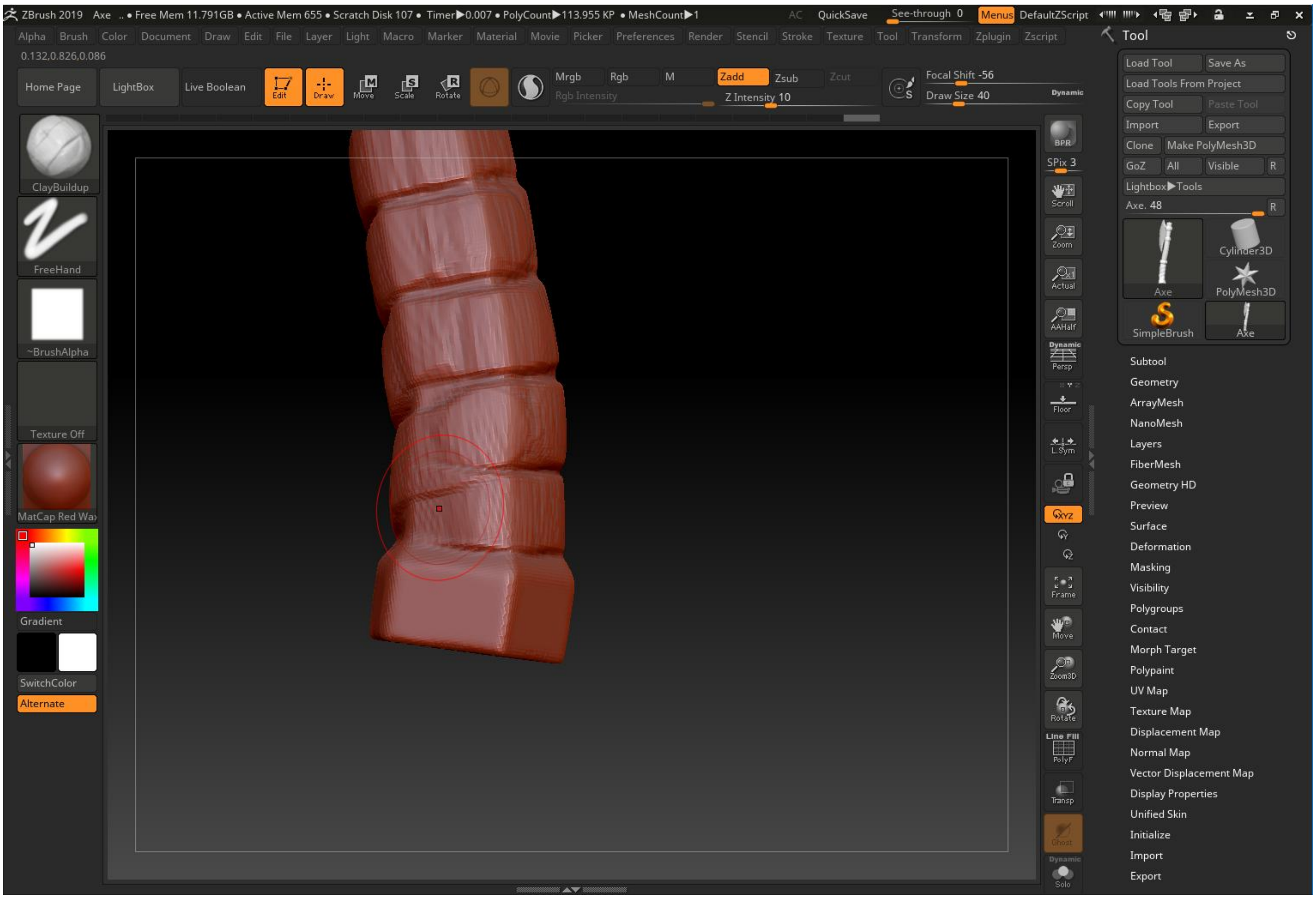


重复同样的步骤，一直旋转和画出来

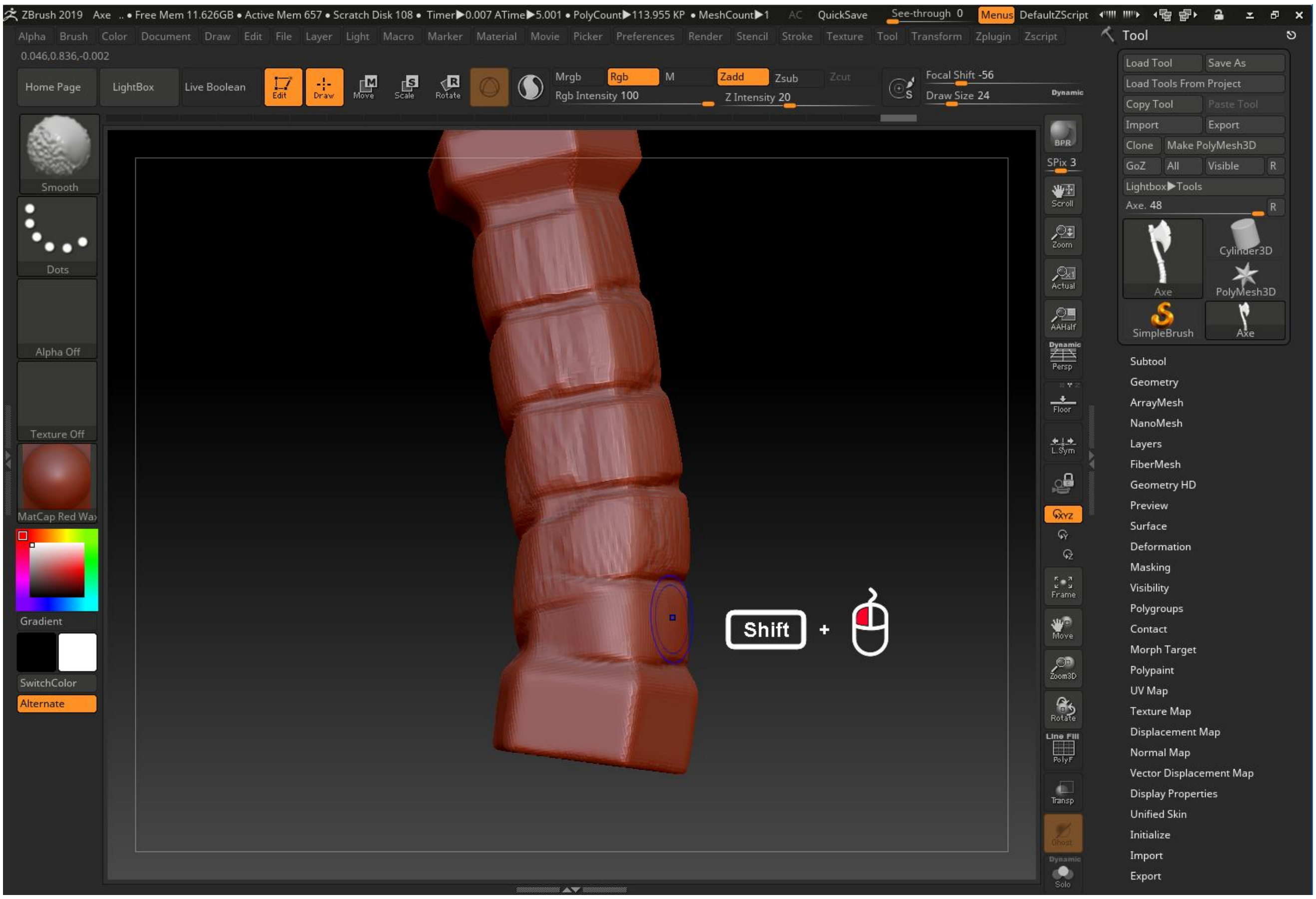




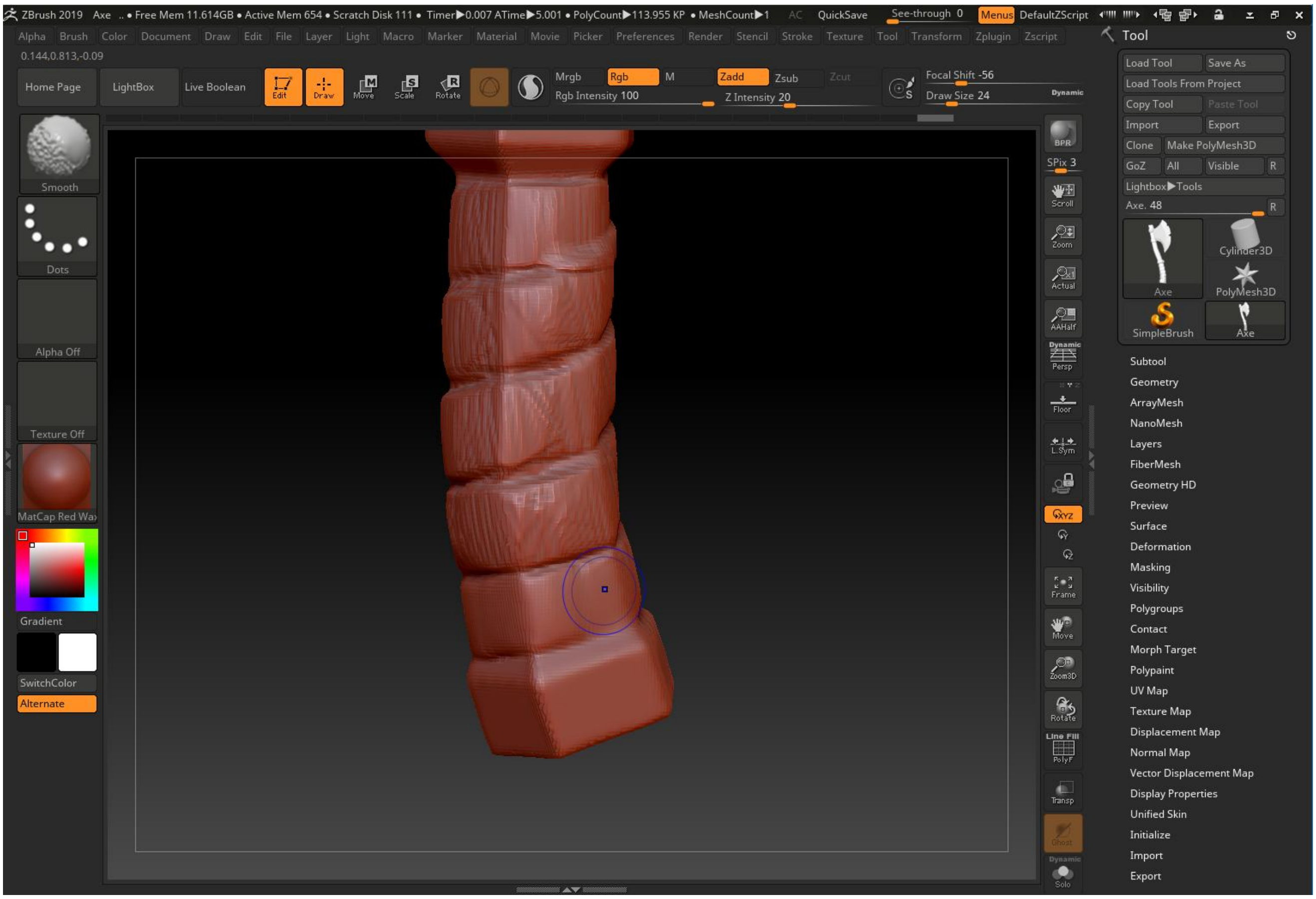
完成了，现在手把就像被布条包着了

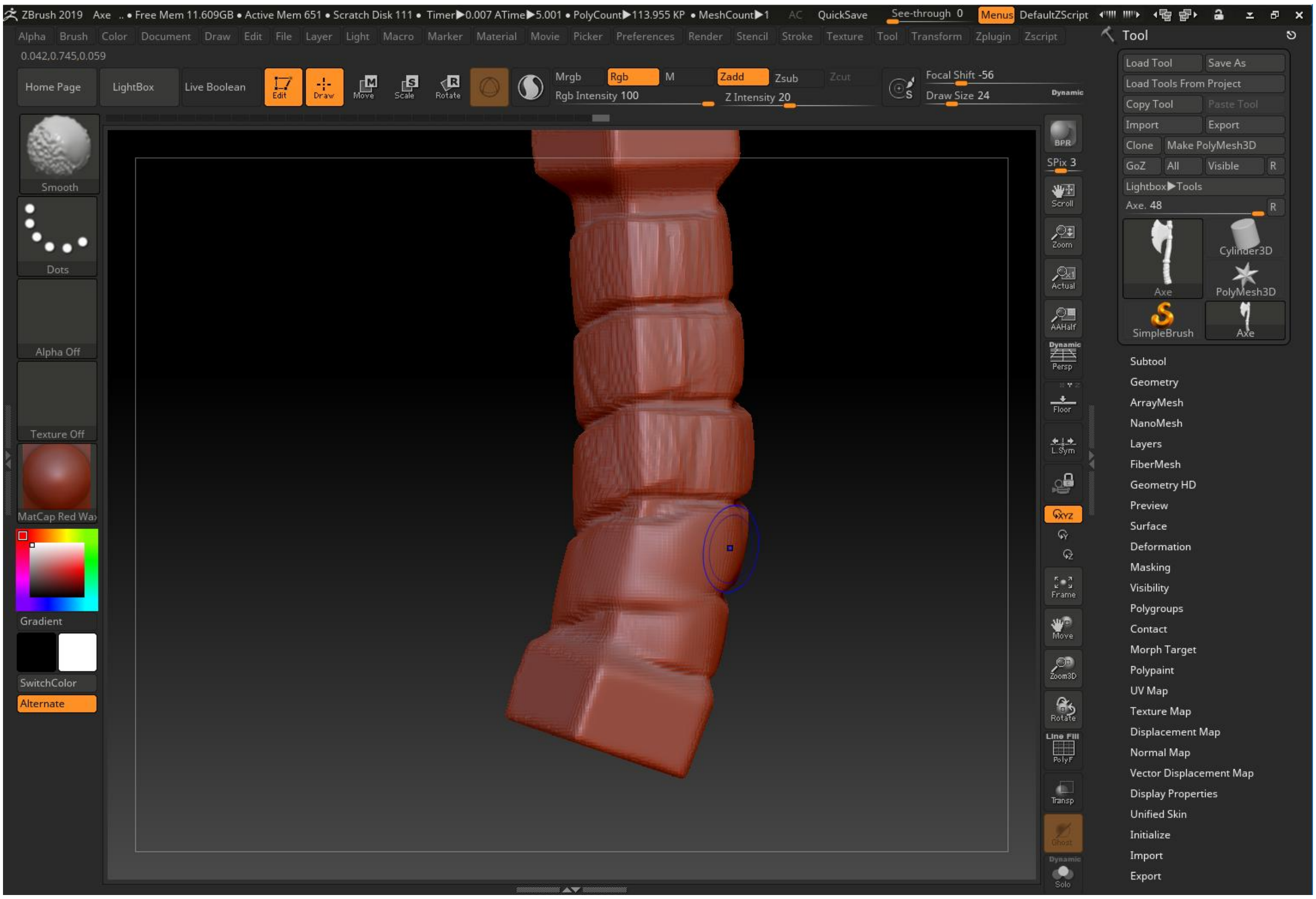


按着 Shift，把刚刚画的“布条”弄光滑

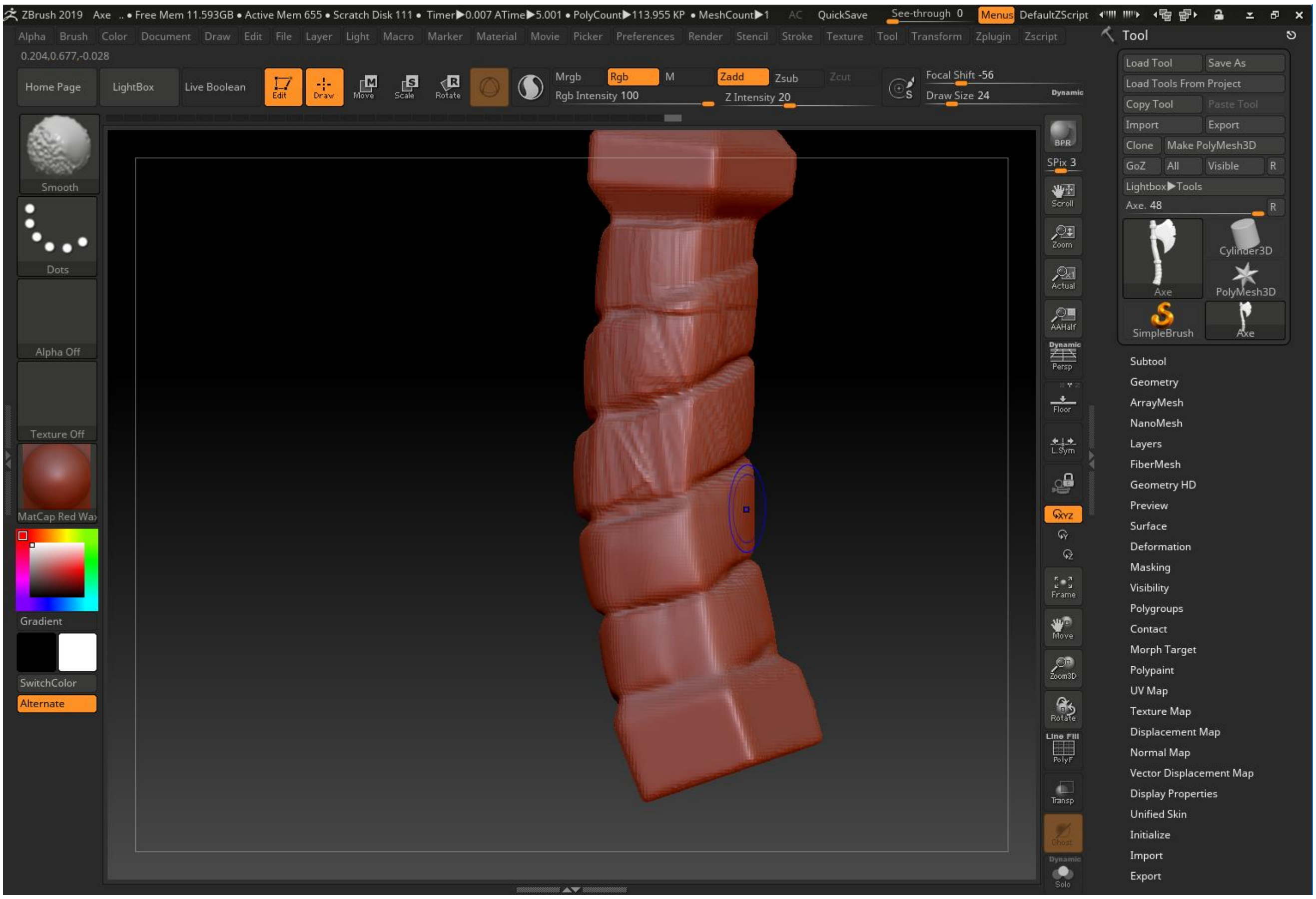


重复同样的步骤，一直旋转和表面弄光滑

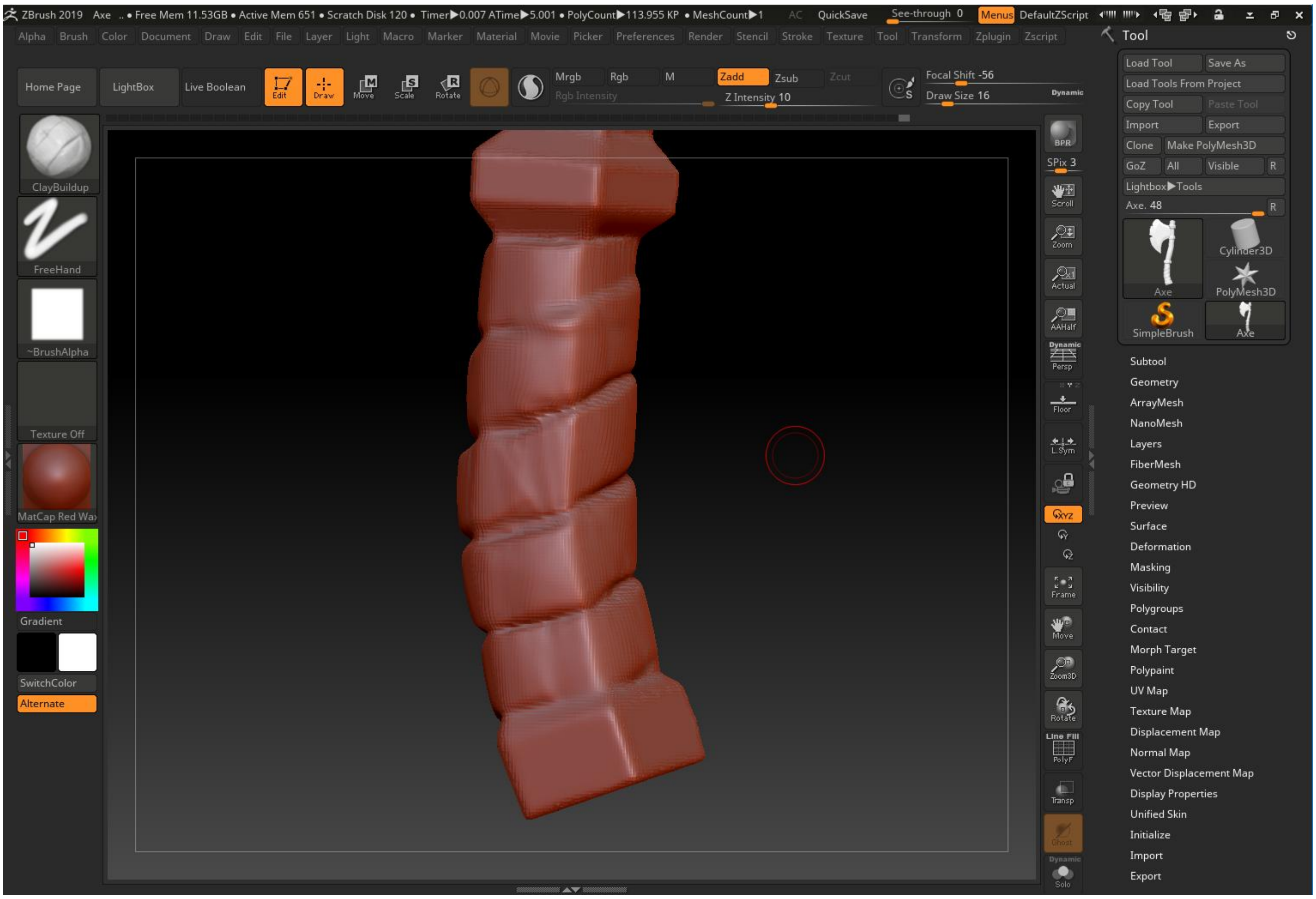




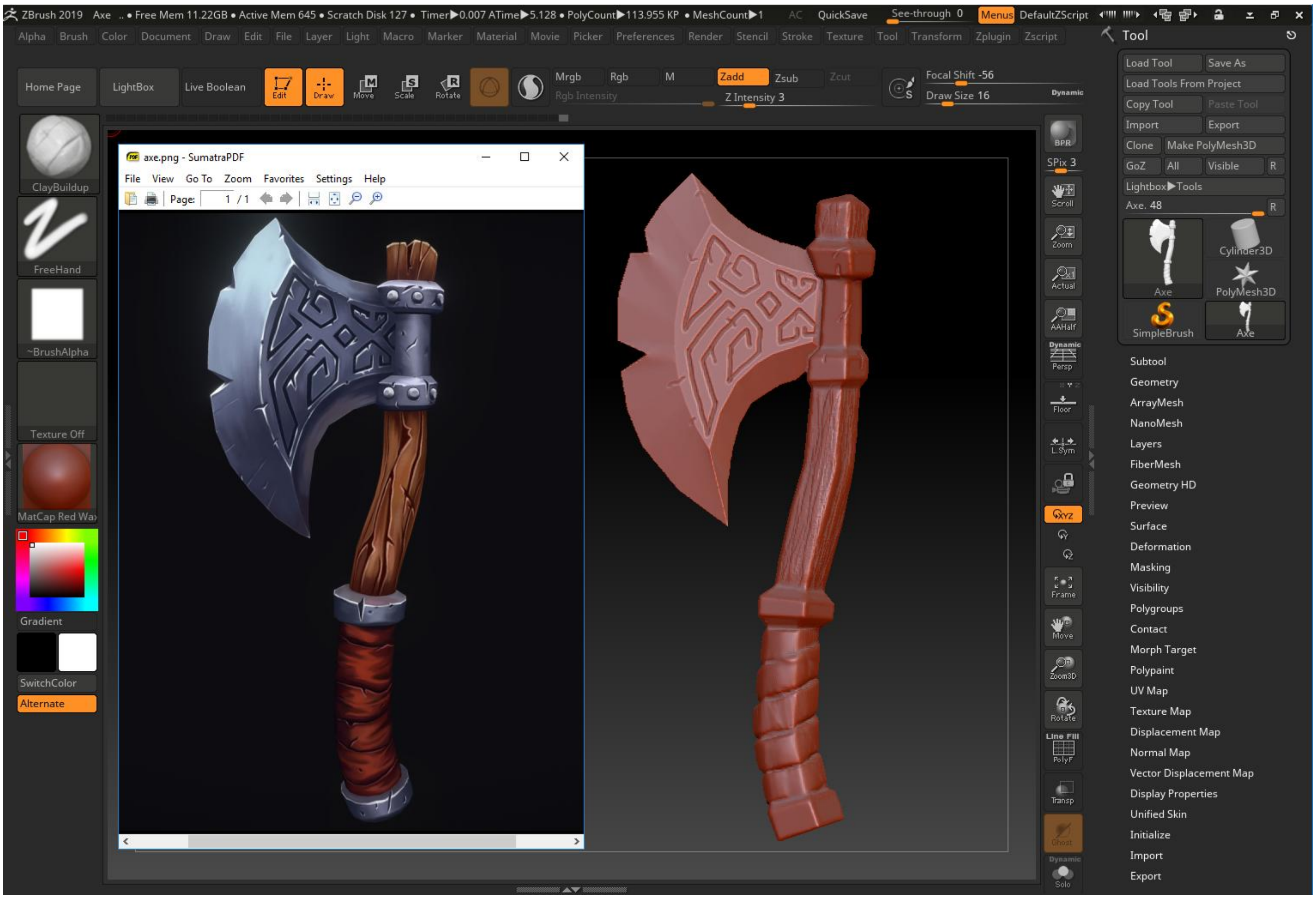
重复同样的步骤，一直旋转和表面弄光滑



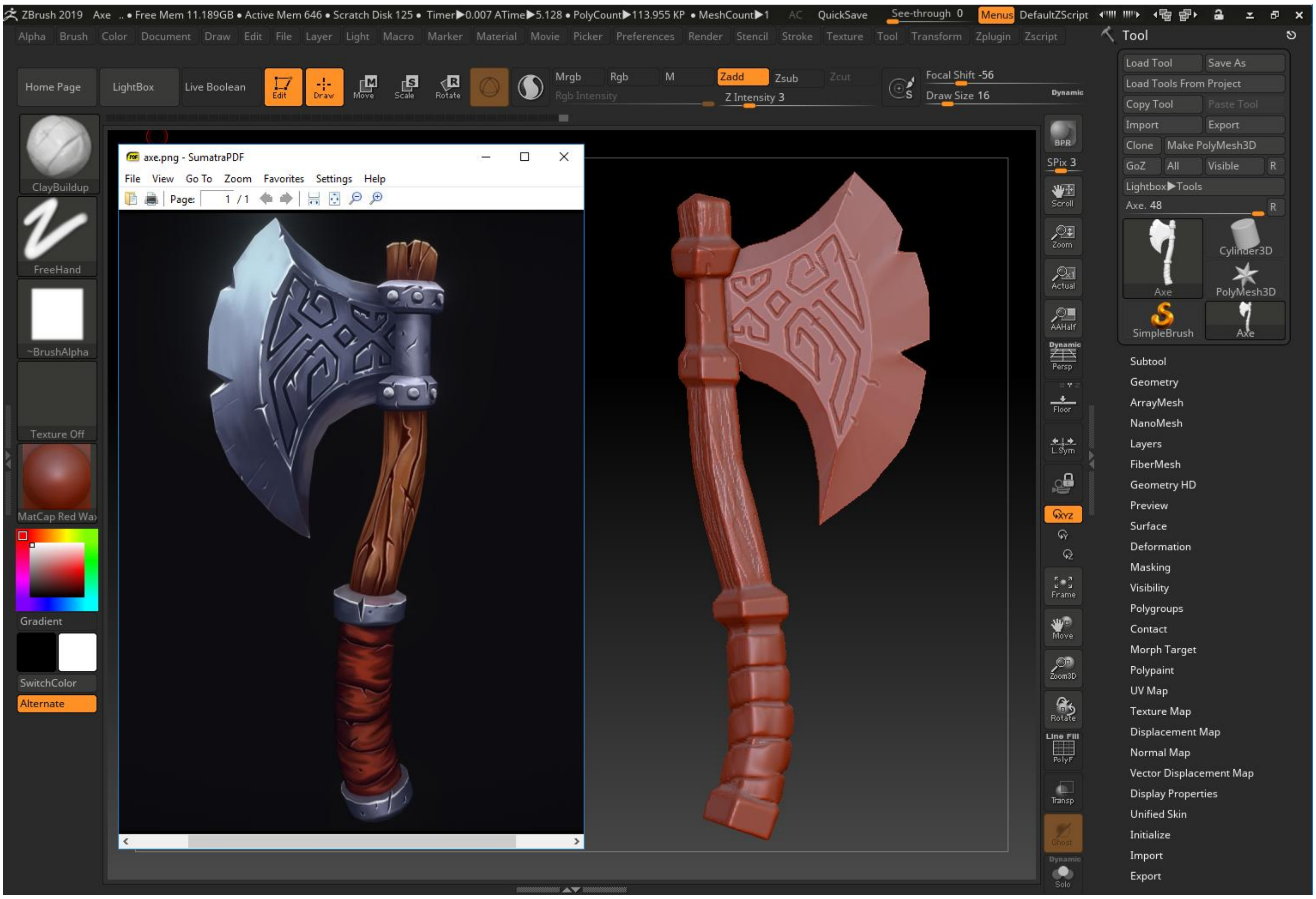
完成



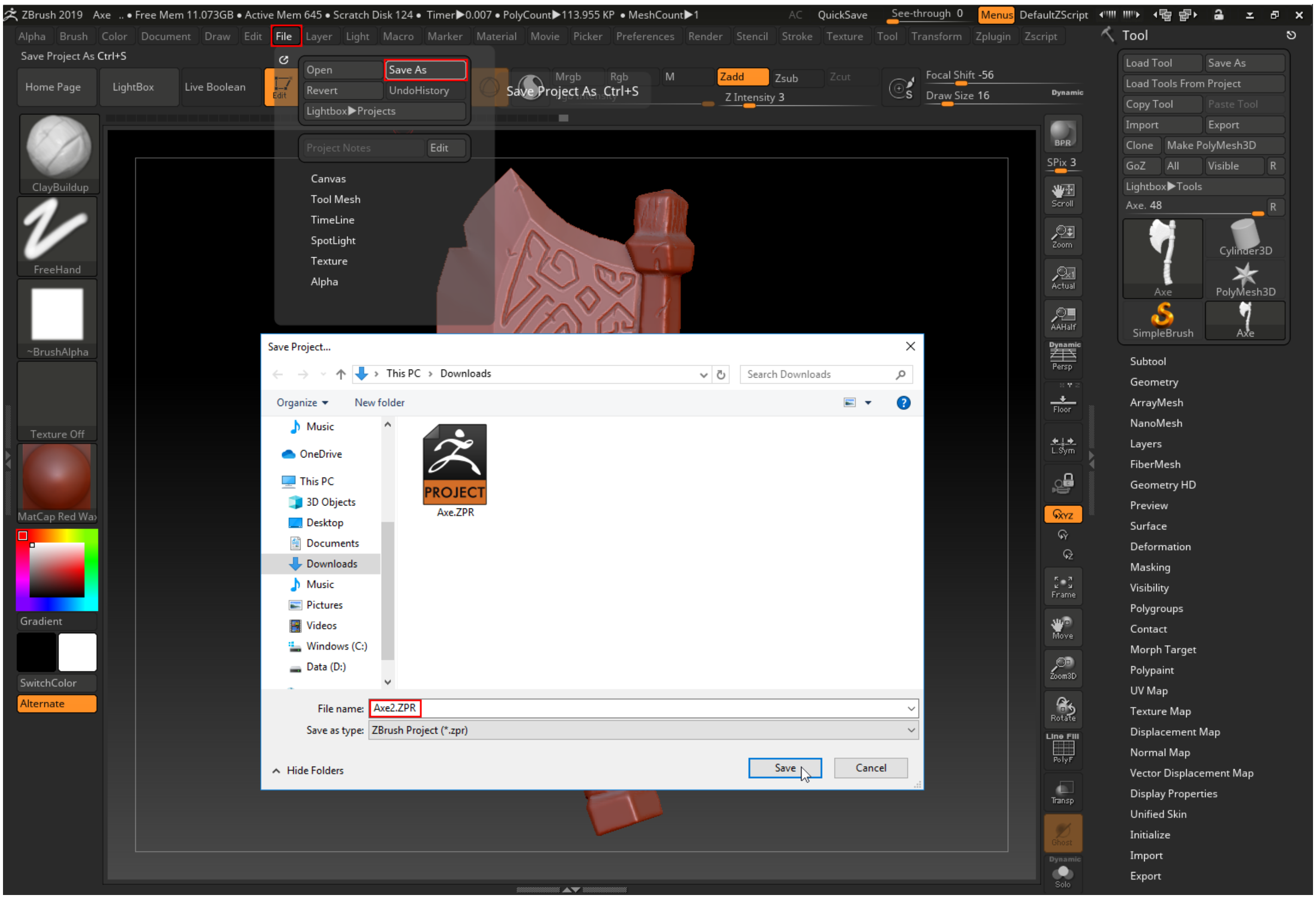
完成了，现在这里是斧头的表面



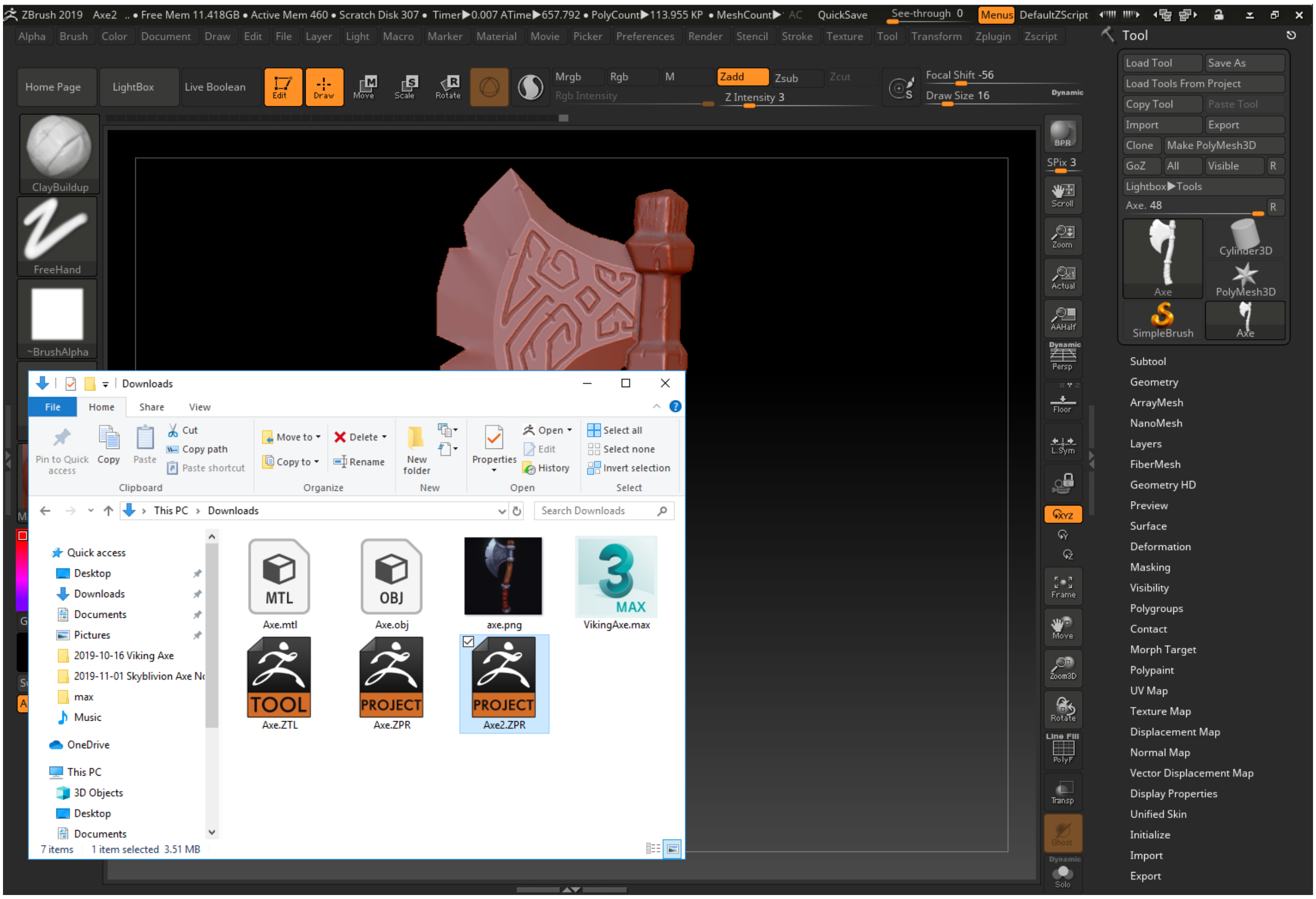
旋转到后面，检查看看



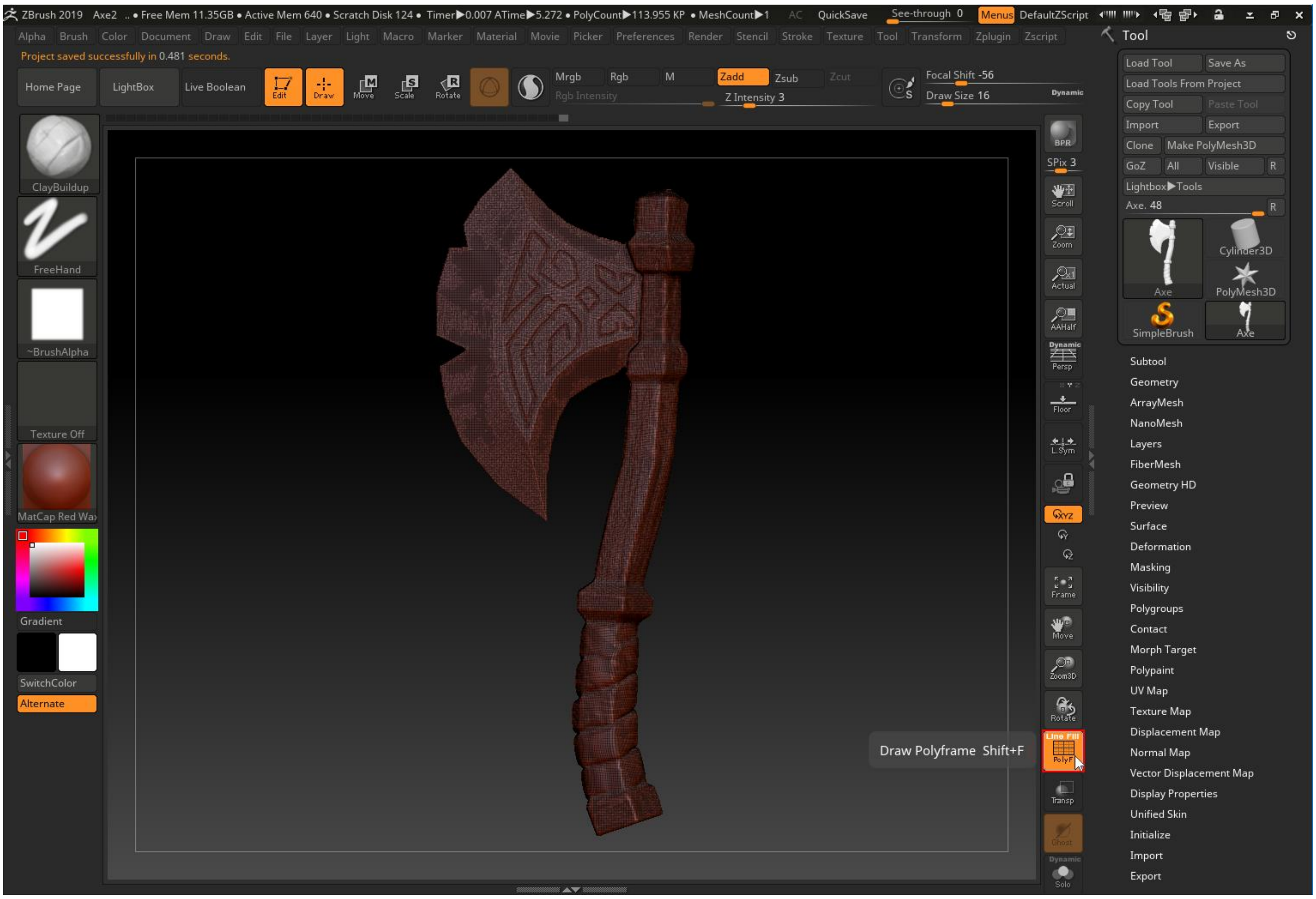
储存起来，还有我们也要另外存一个叫 Axe2.ZPR (要用来 decimate master)



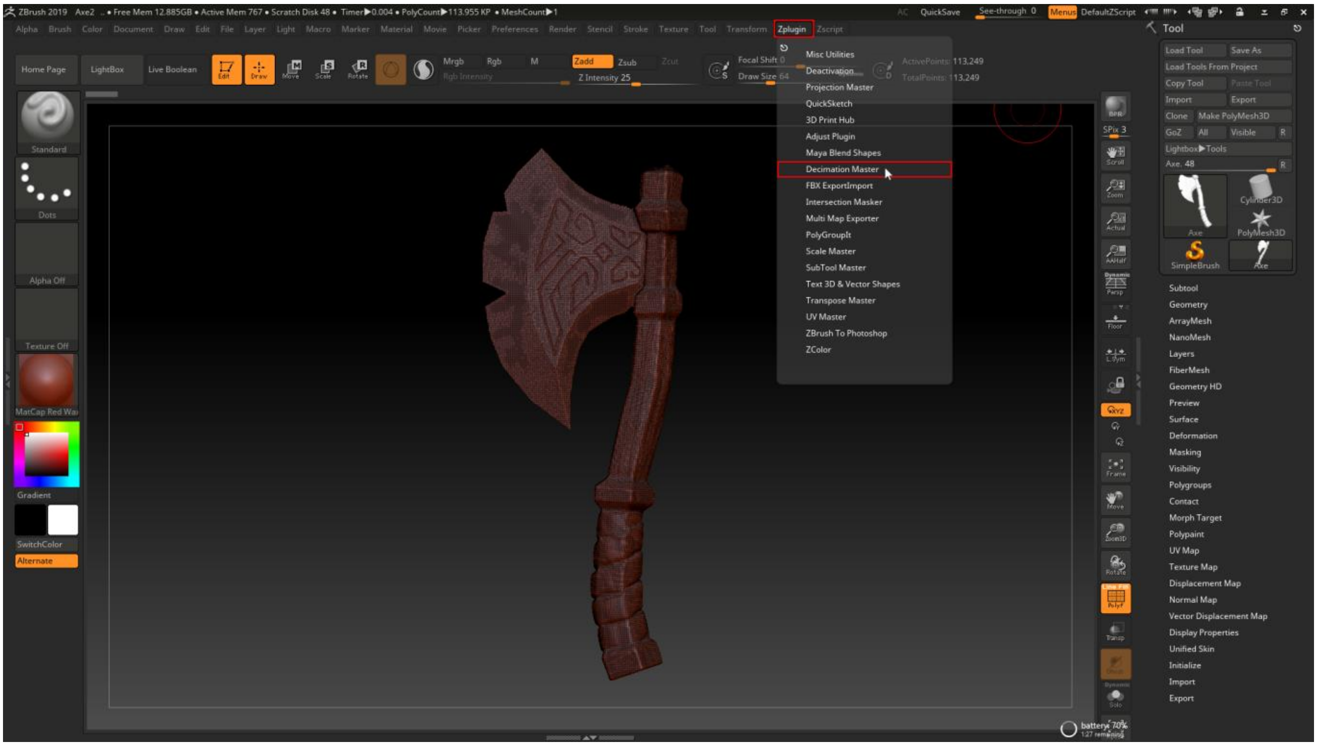
我们现在可以看到有 Axe.ZPR and Axe2.ZPR



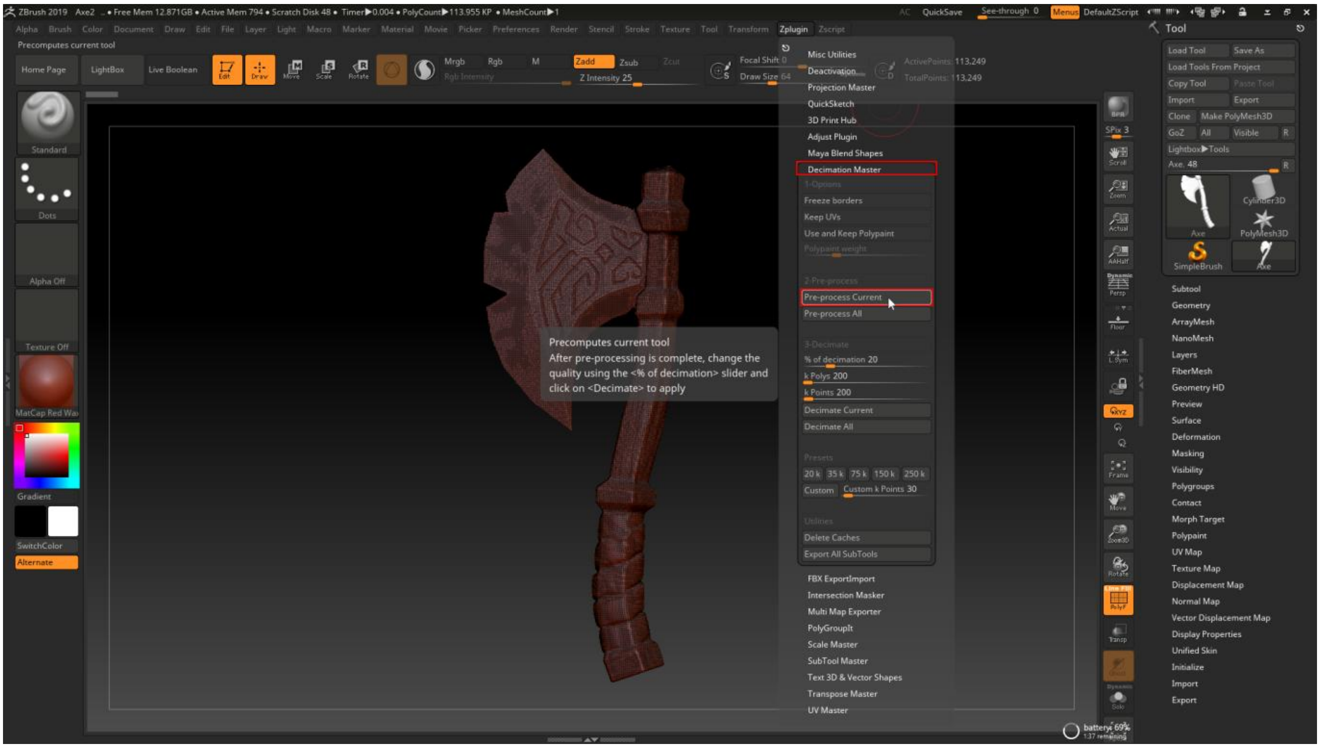
打开 “Line Fill”



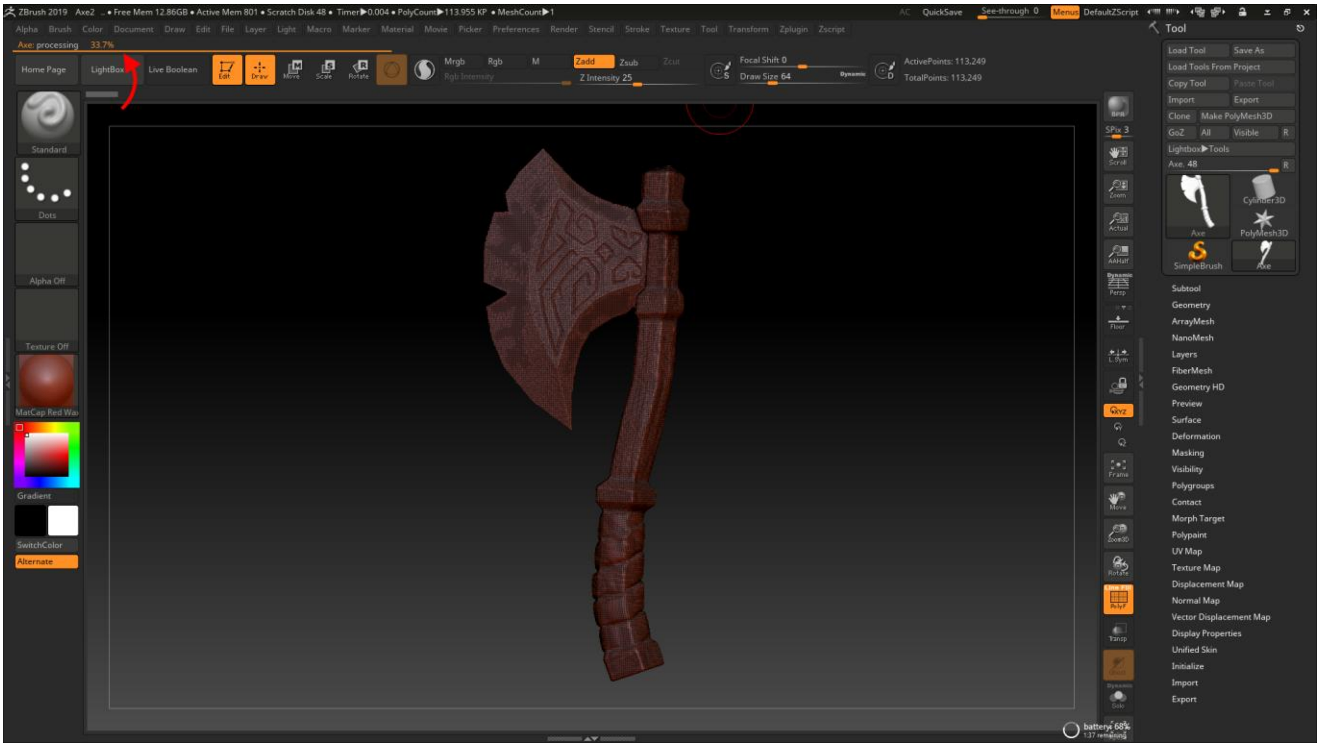
按下 Zplugin → Decimation Master (要用来把减少表面和线条)



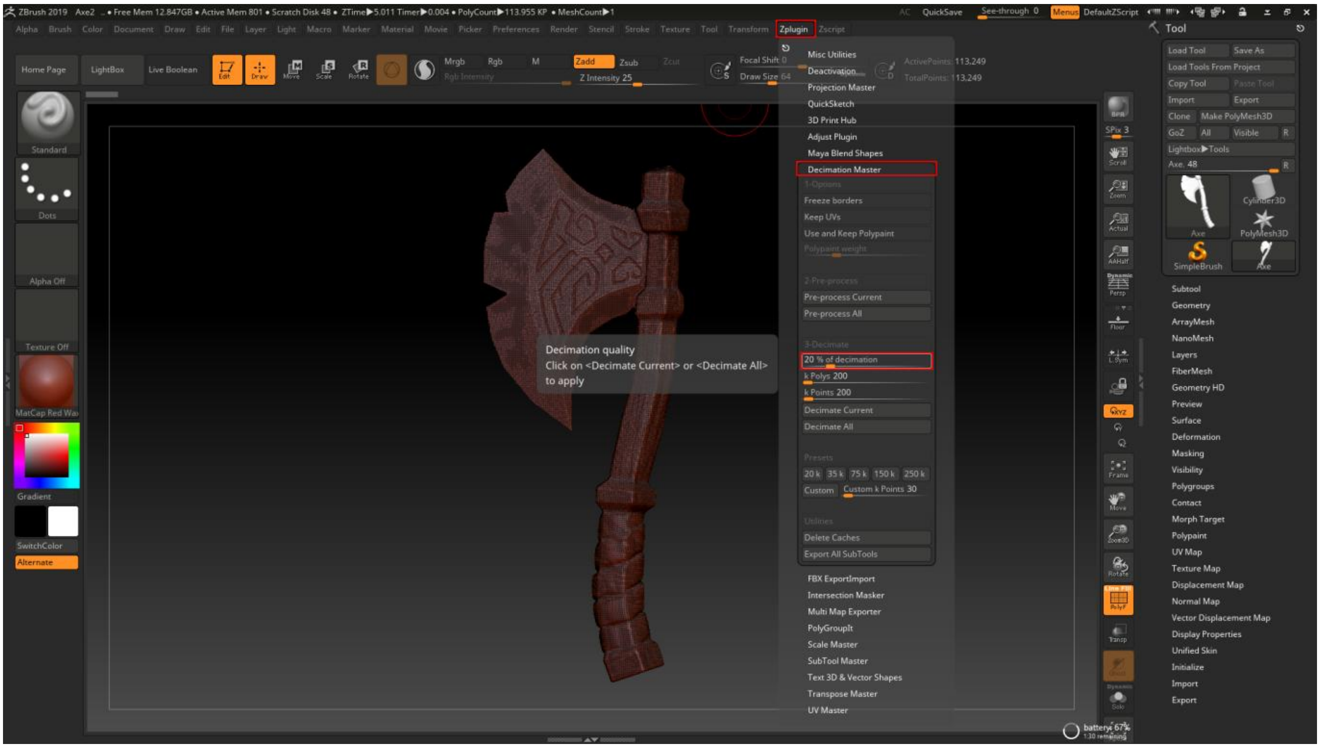
先按“Pre-process Current”



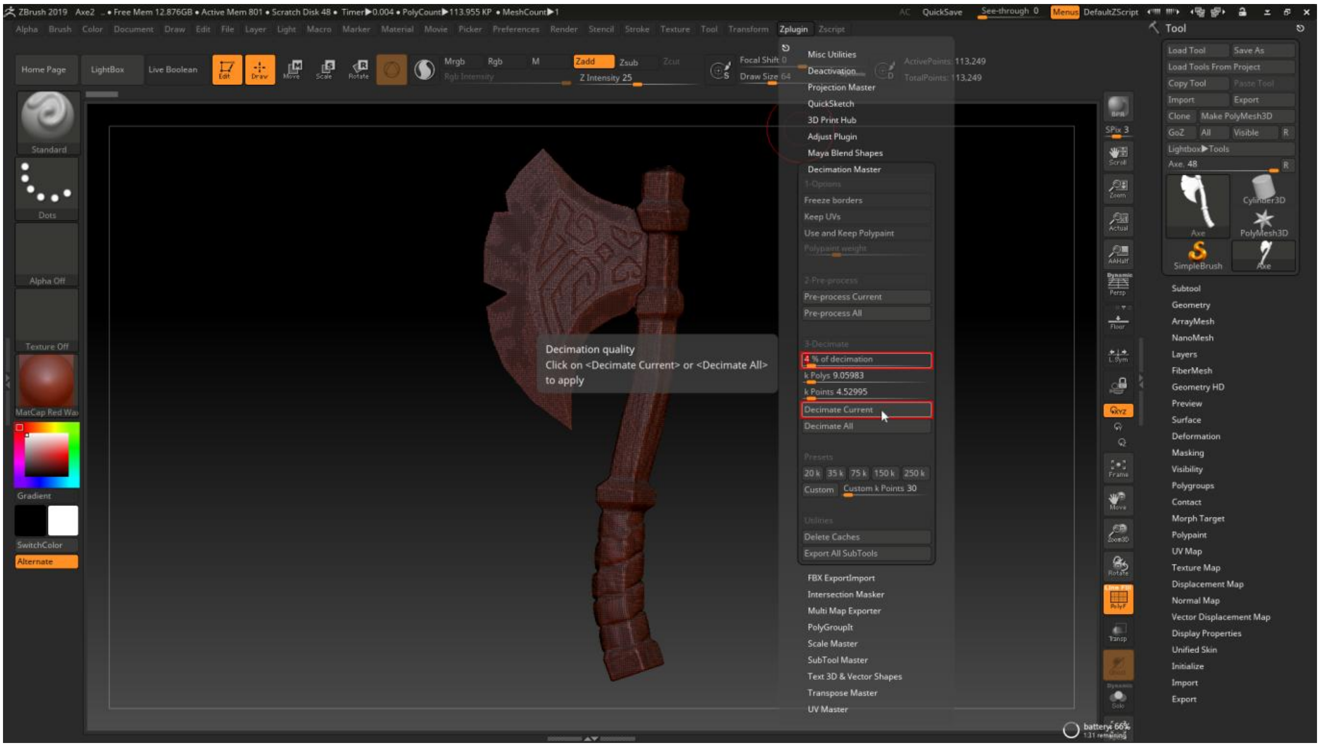
等待完成 processing…



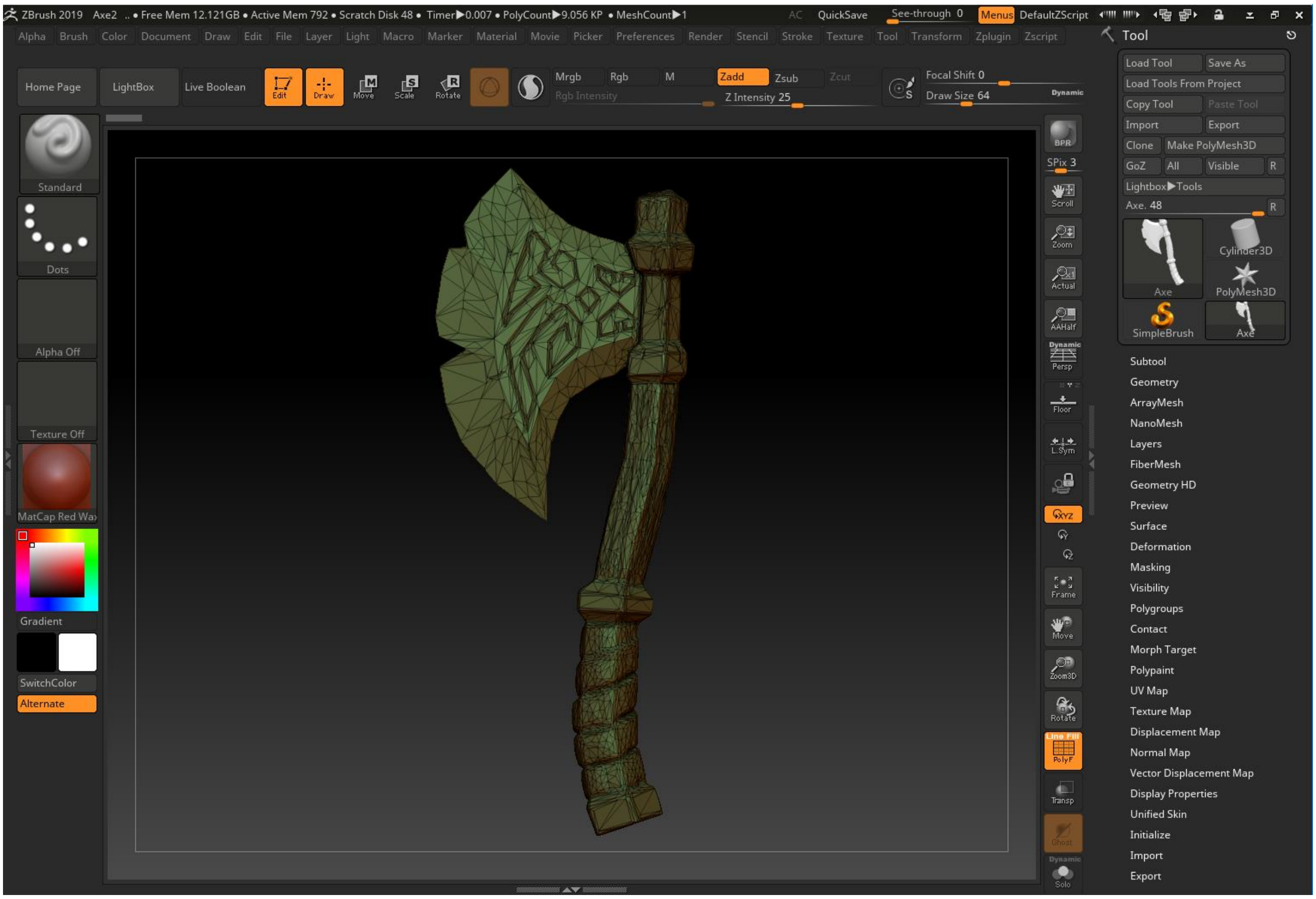
调整 decimation quality (原本: 20%)



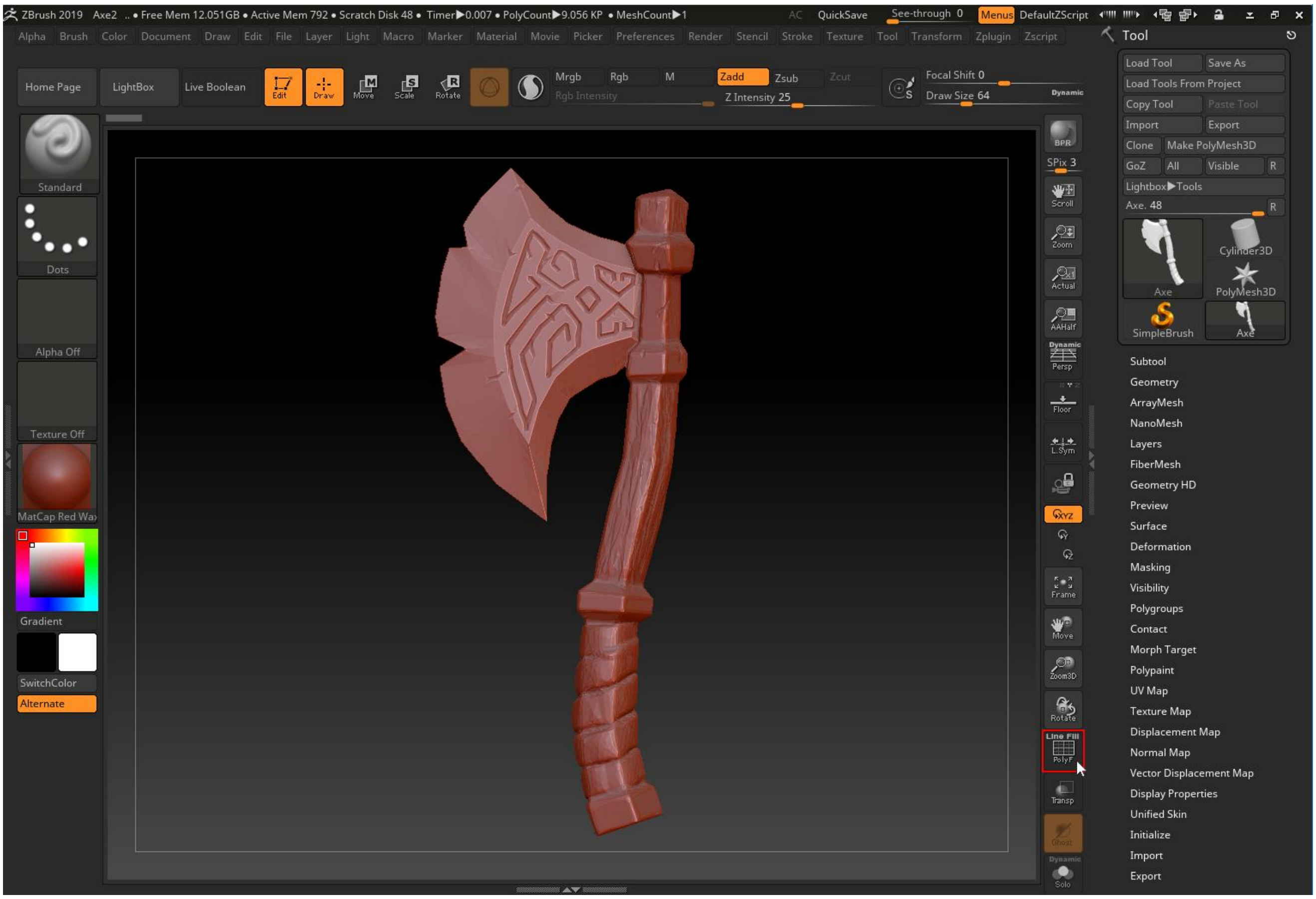
我把它调整成 4%，然后按“Decimate Current”



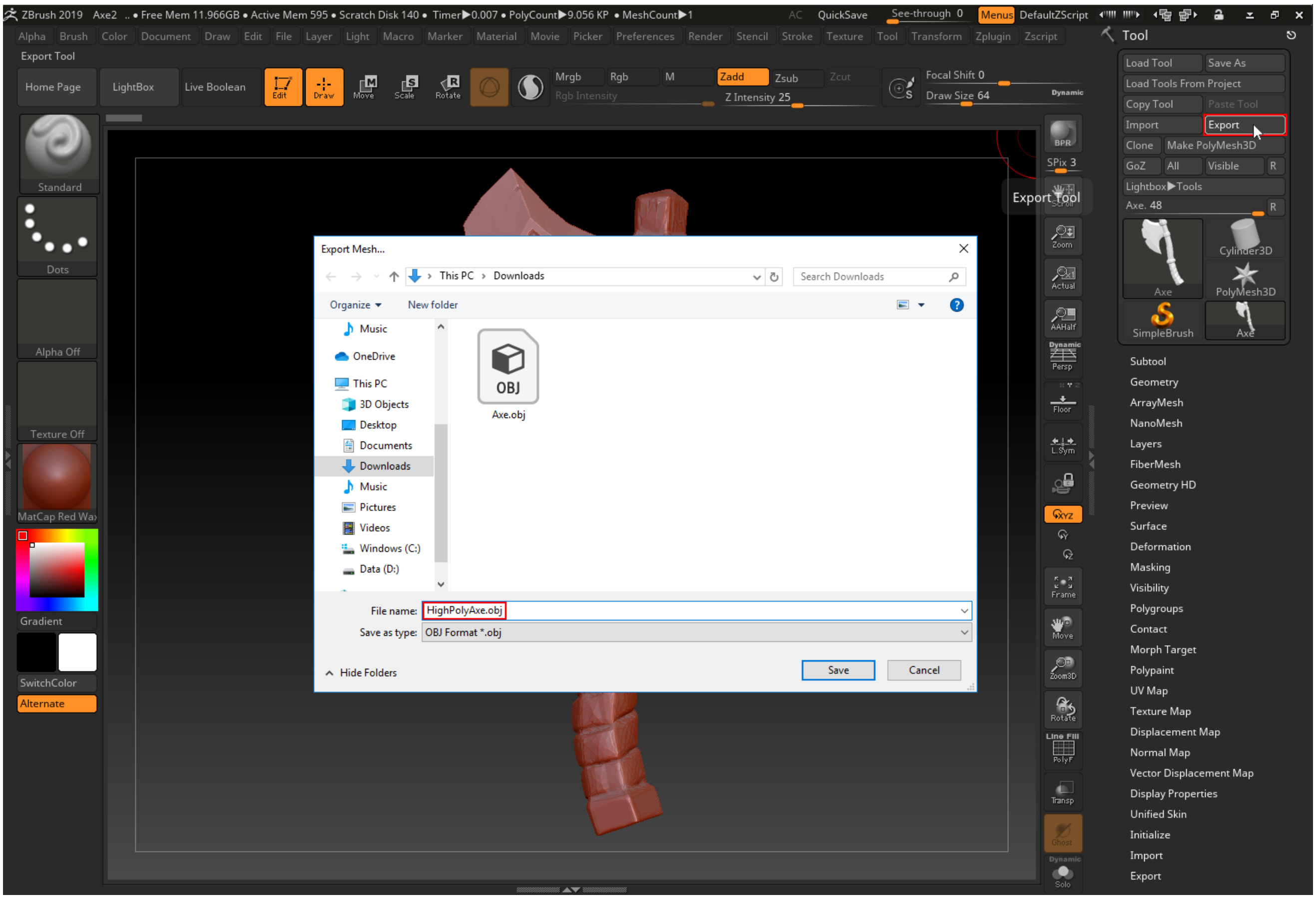
按了 Decimate Current 之后，就像这样子



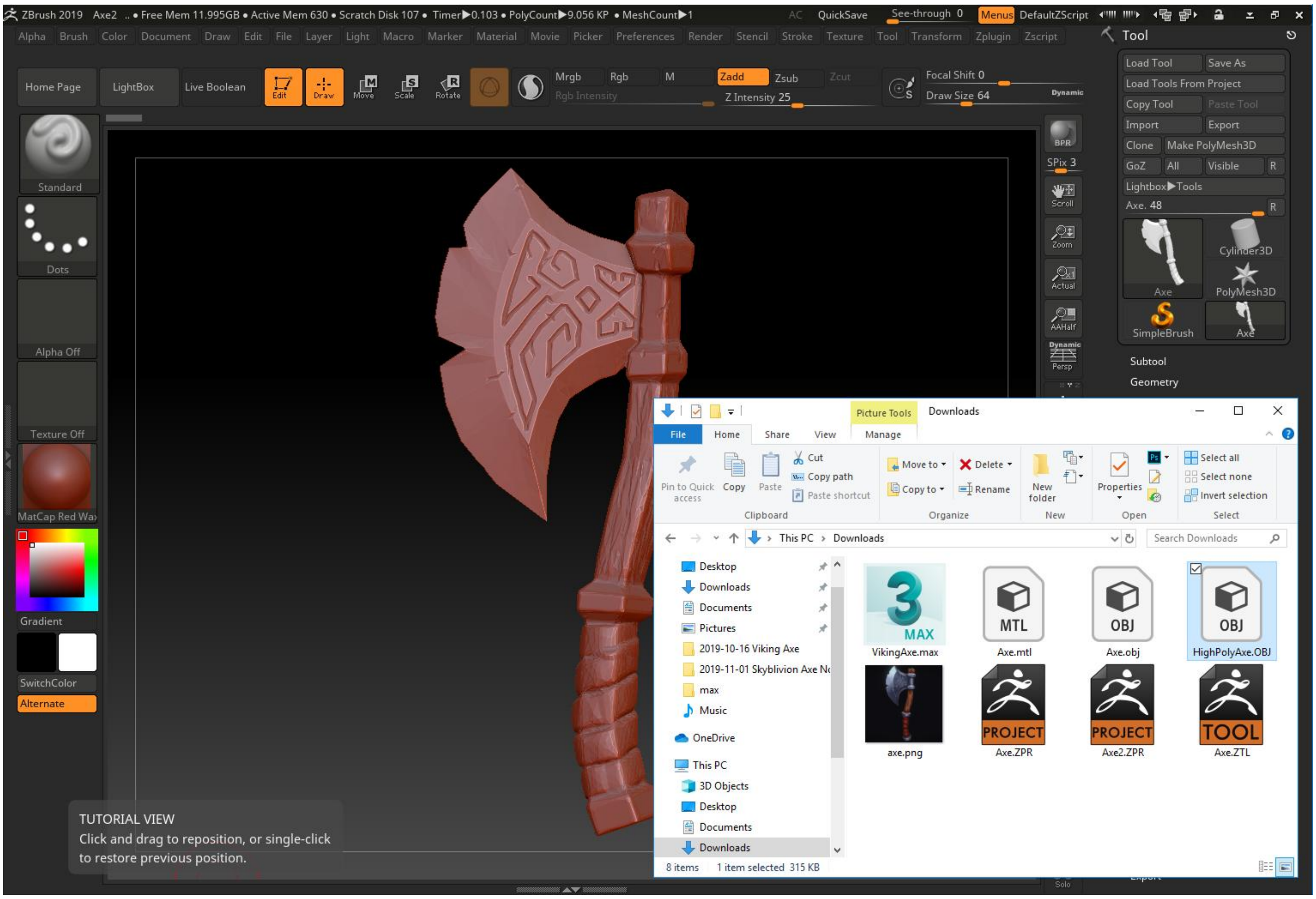
取消 Line Fill，然后检查斧头所有表面是否有任何问题



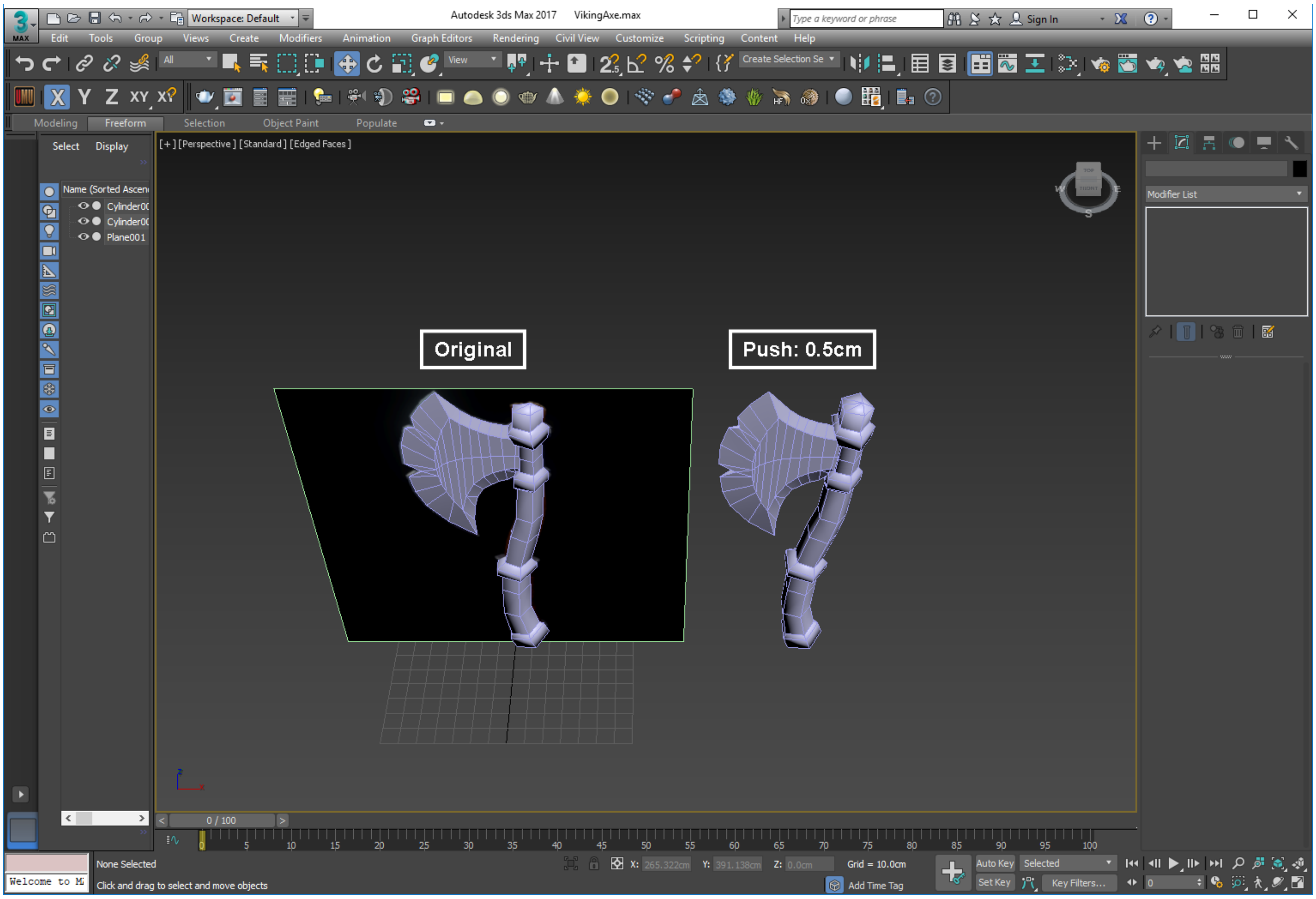
储存起来，还有把斧头导出，按 Export，然后储存成 HighPolyAxe.obj



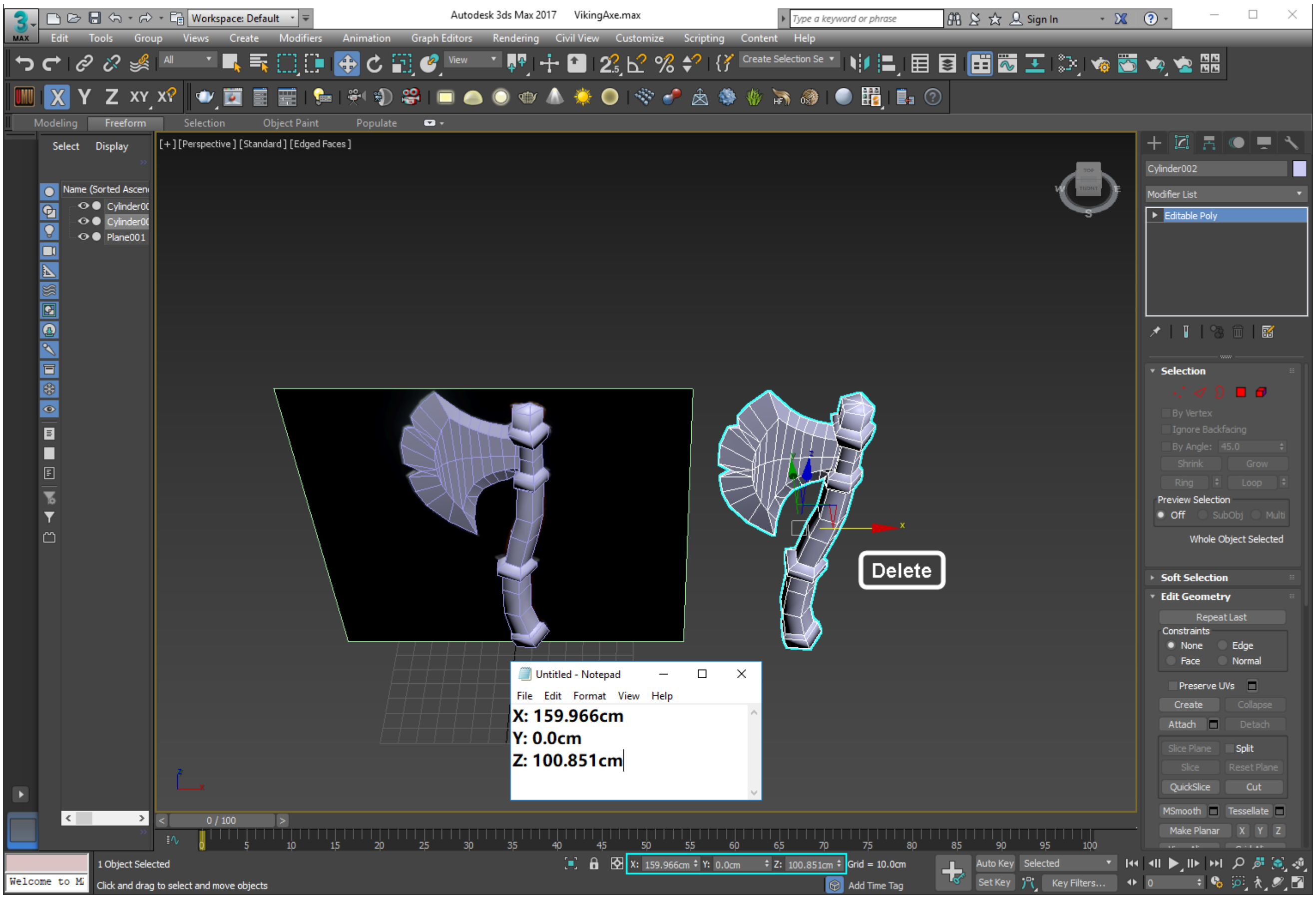
现在我们有两个 obj 文件，Axe.obj (低模型) 和 HighPolyAxe.obj (Zbrush)



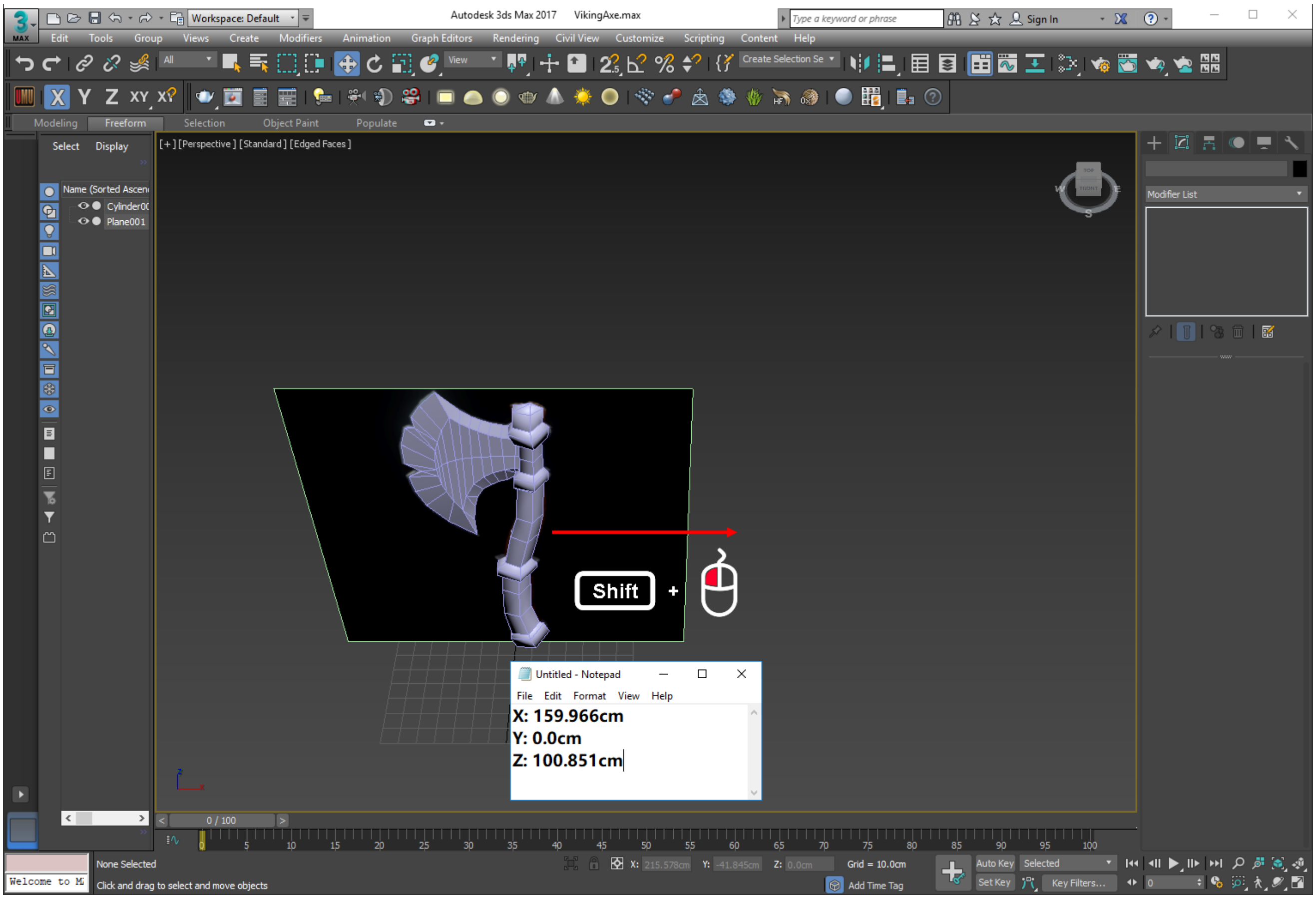
在还没有导入模型，我们先删除第二个斧头，因为我们已经用了“Push”



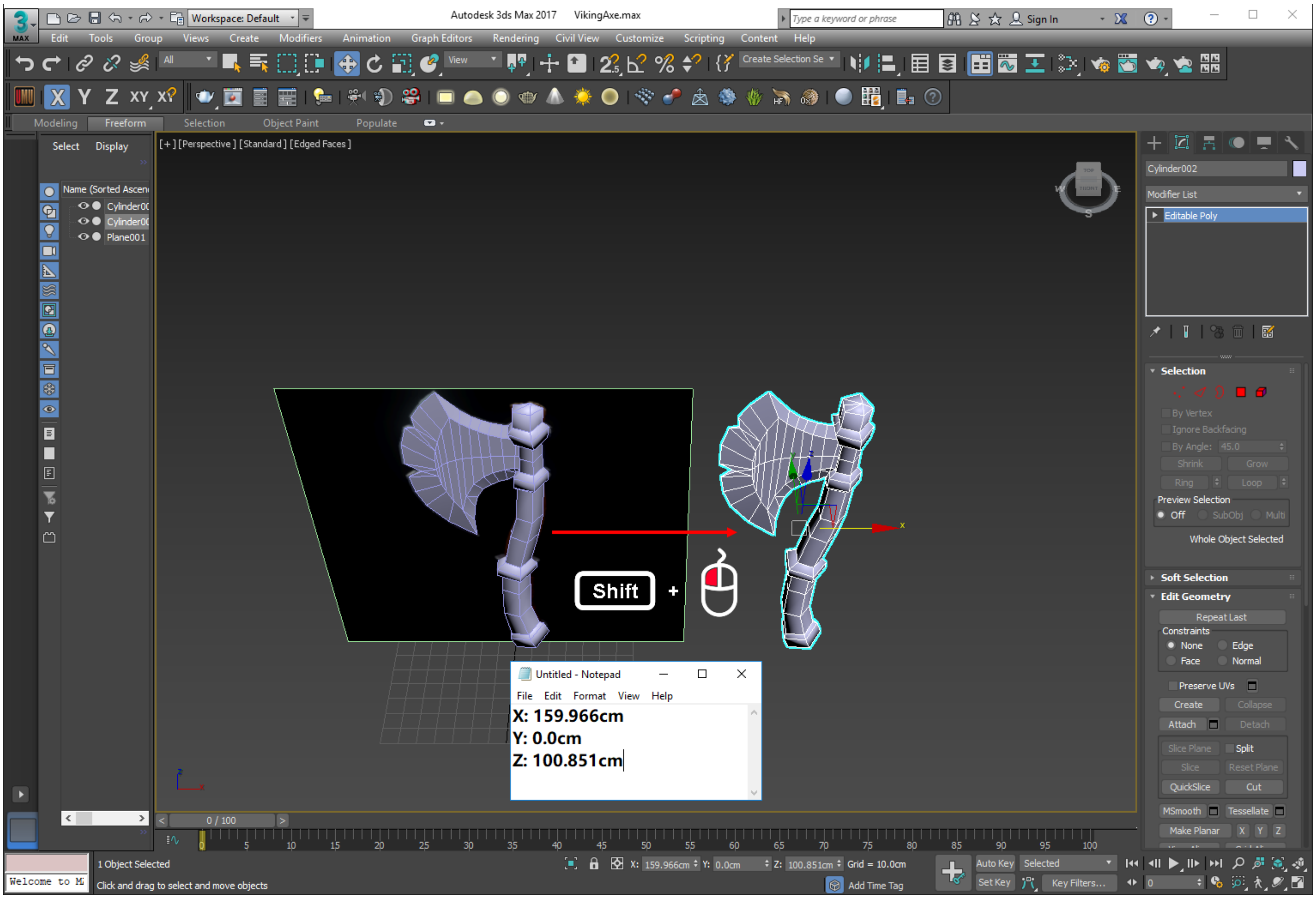
抄下第二个斧头的 XYZ 位置，然后删除第二个斧头



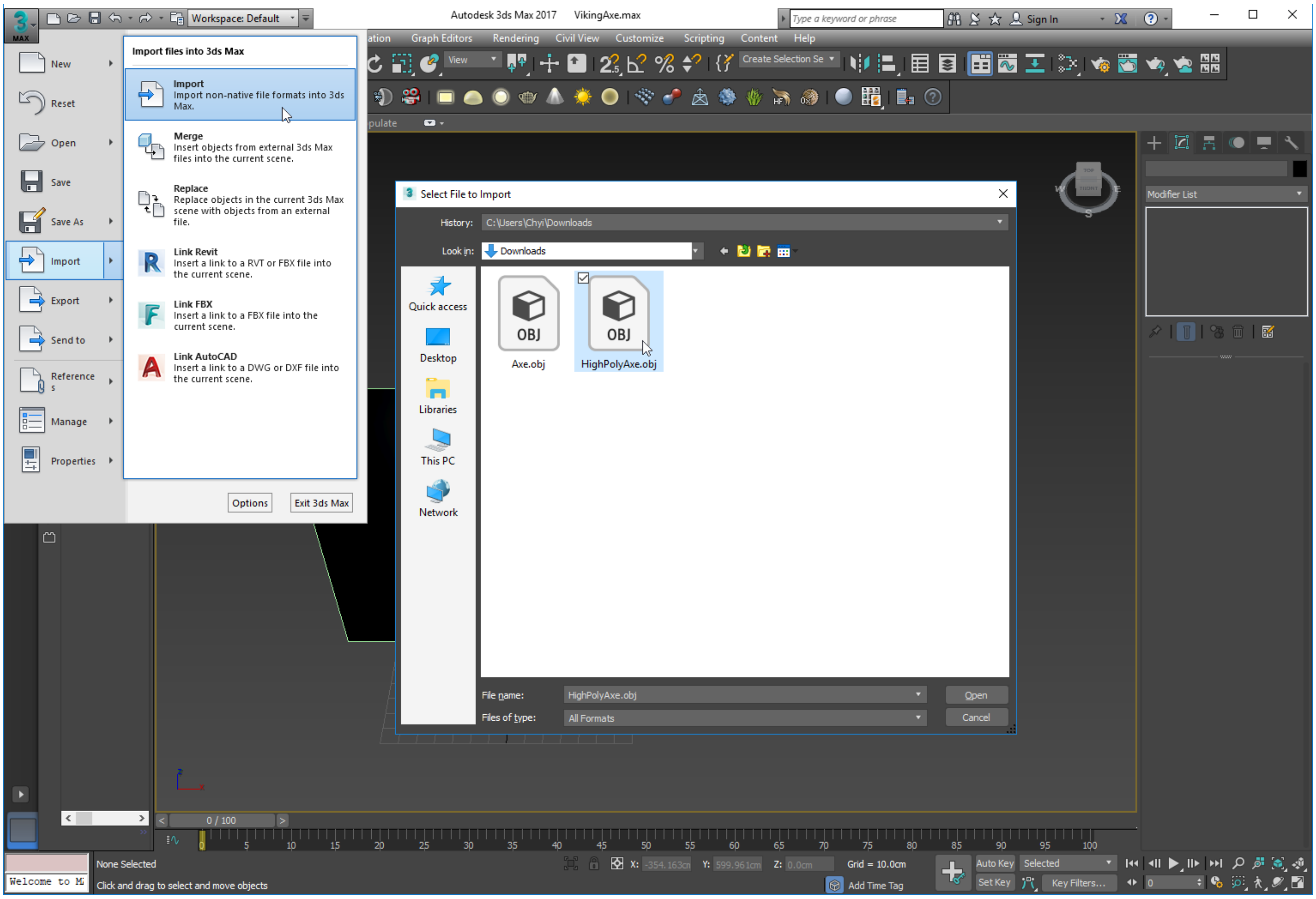
删除之后，按着 Shift 然后复制多一个斧头



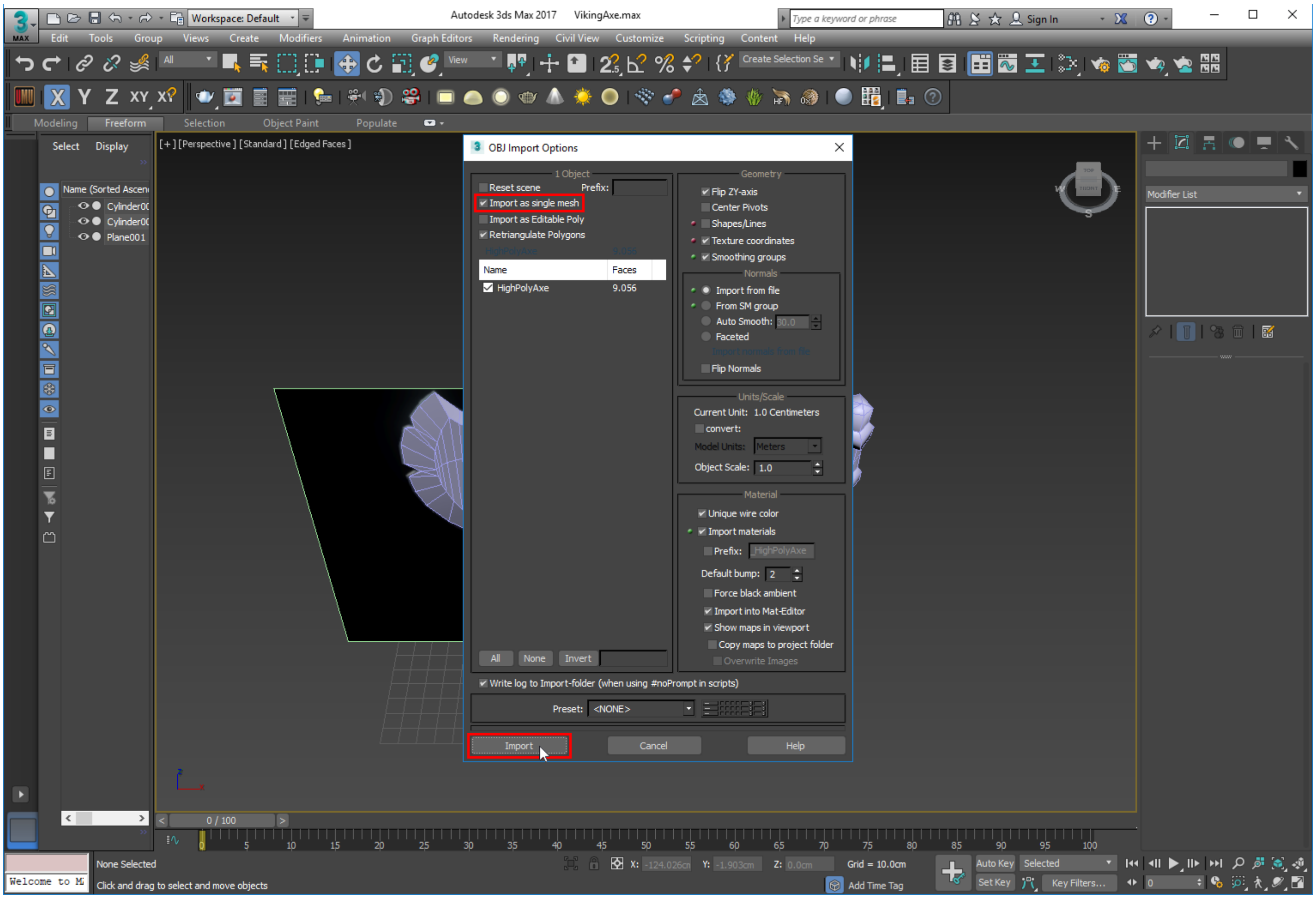
调整 XYZ 位置，确保跟之前的斧头位子是一样的



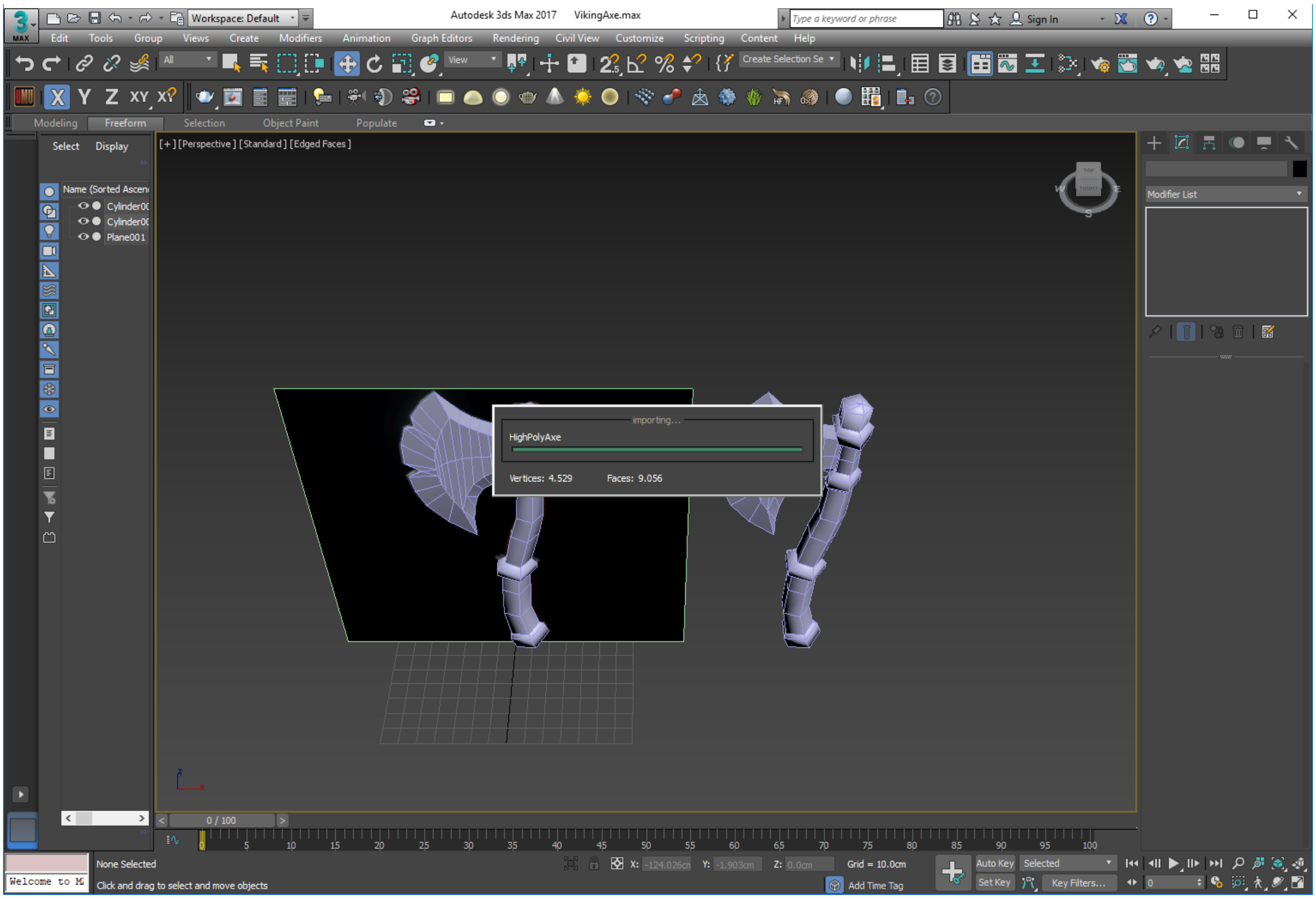
现在可以导入“HighPolyAxe.obj”(Zbrush)



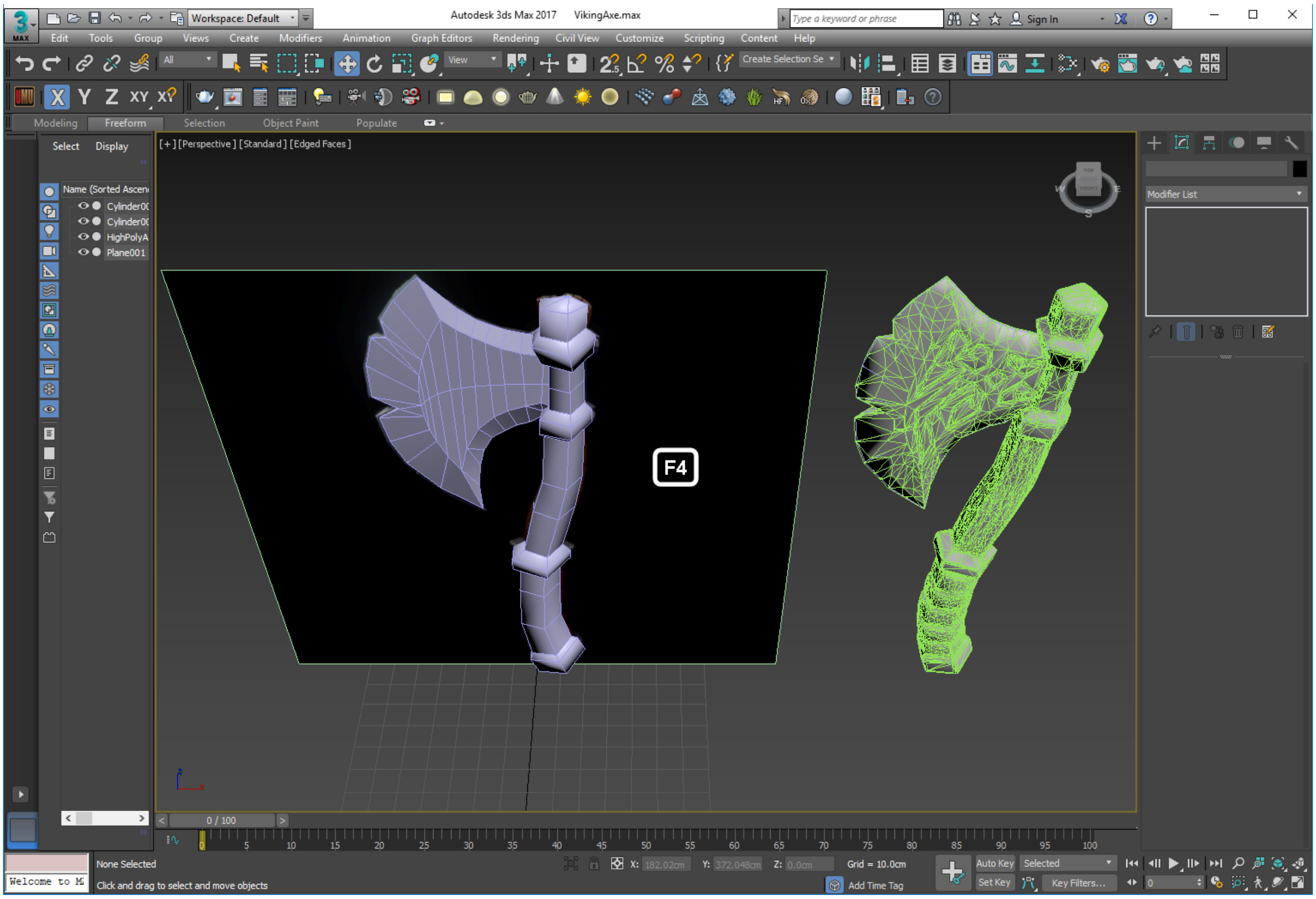
打勾“Import as single mesh”然后按 Import



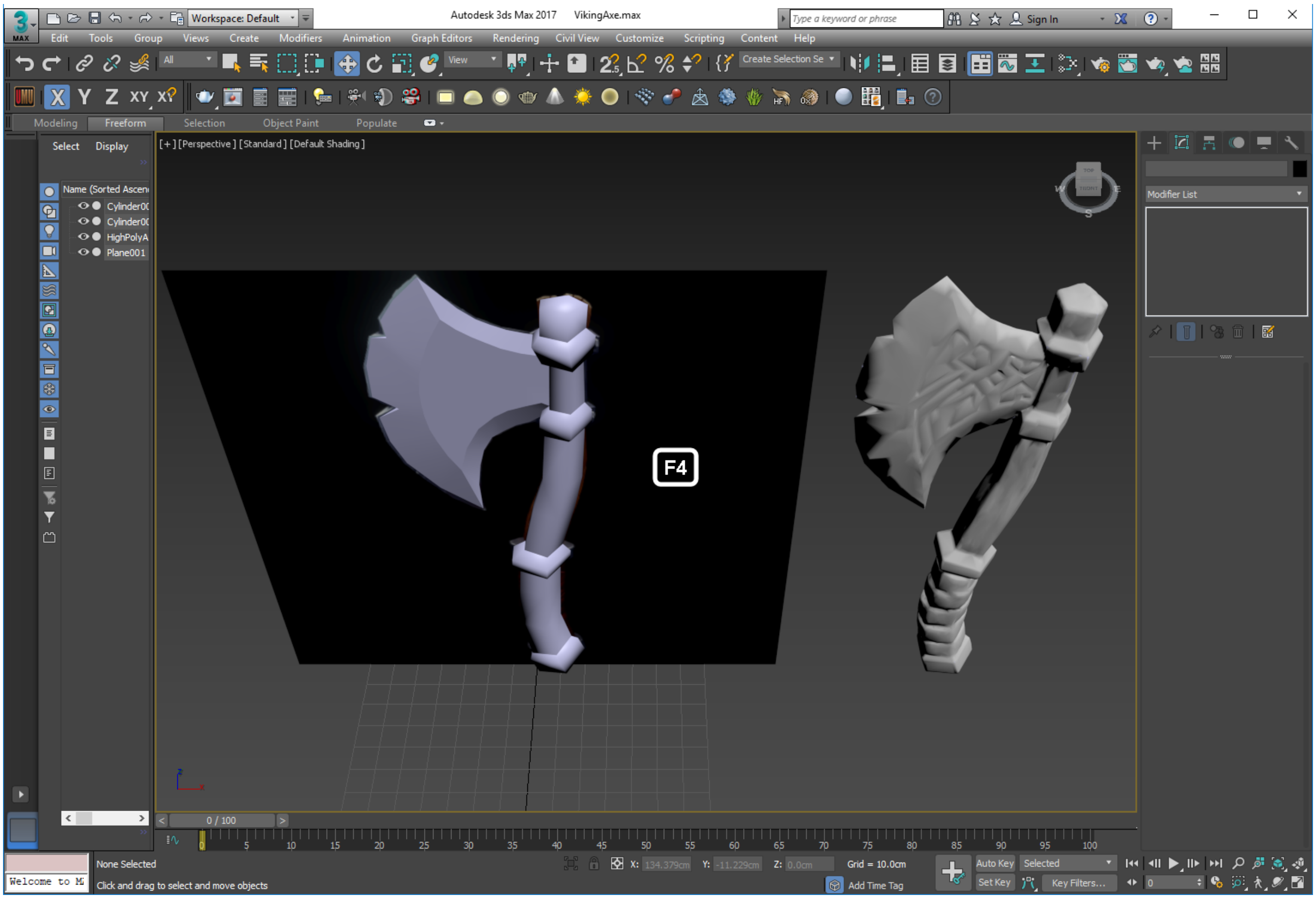
等 importing...



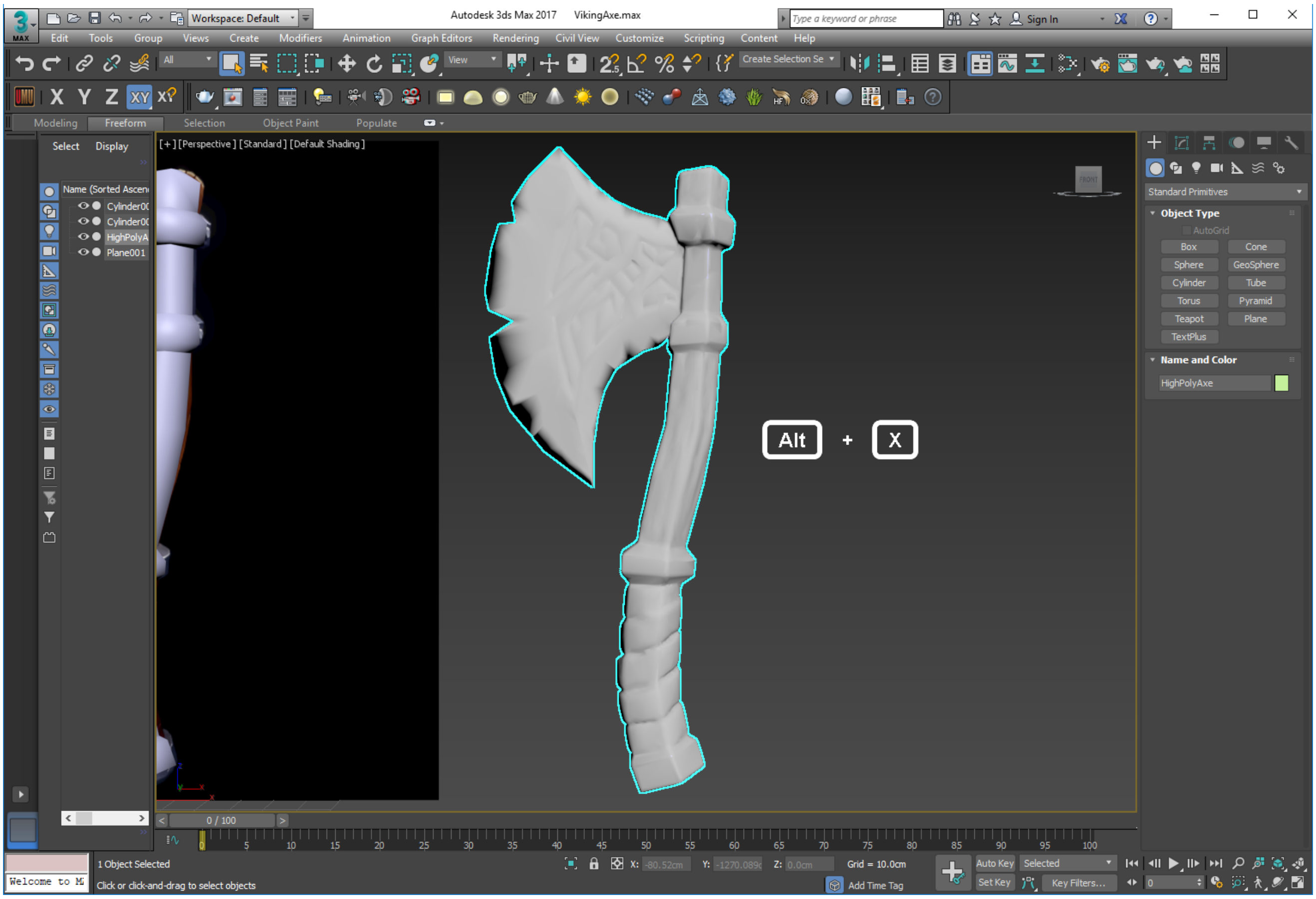
导入完之后，你可以按下 F4 来分别低模型和高模型



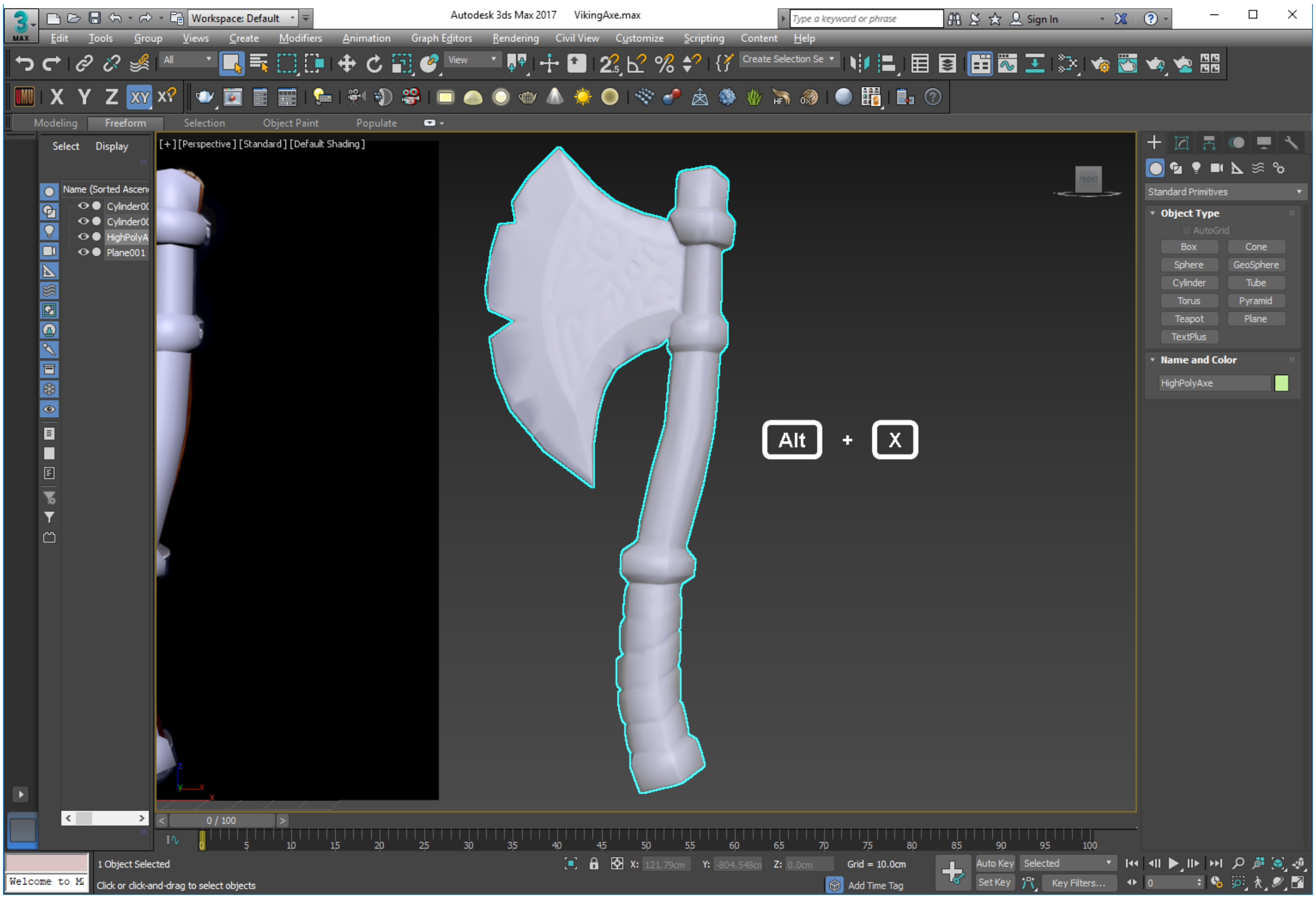
按 F4 隐藏所有线条



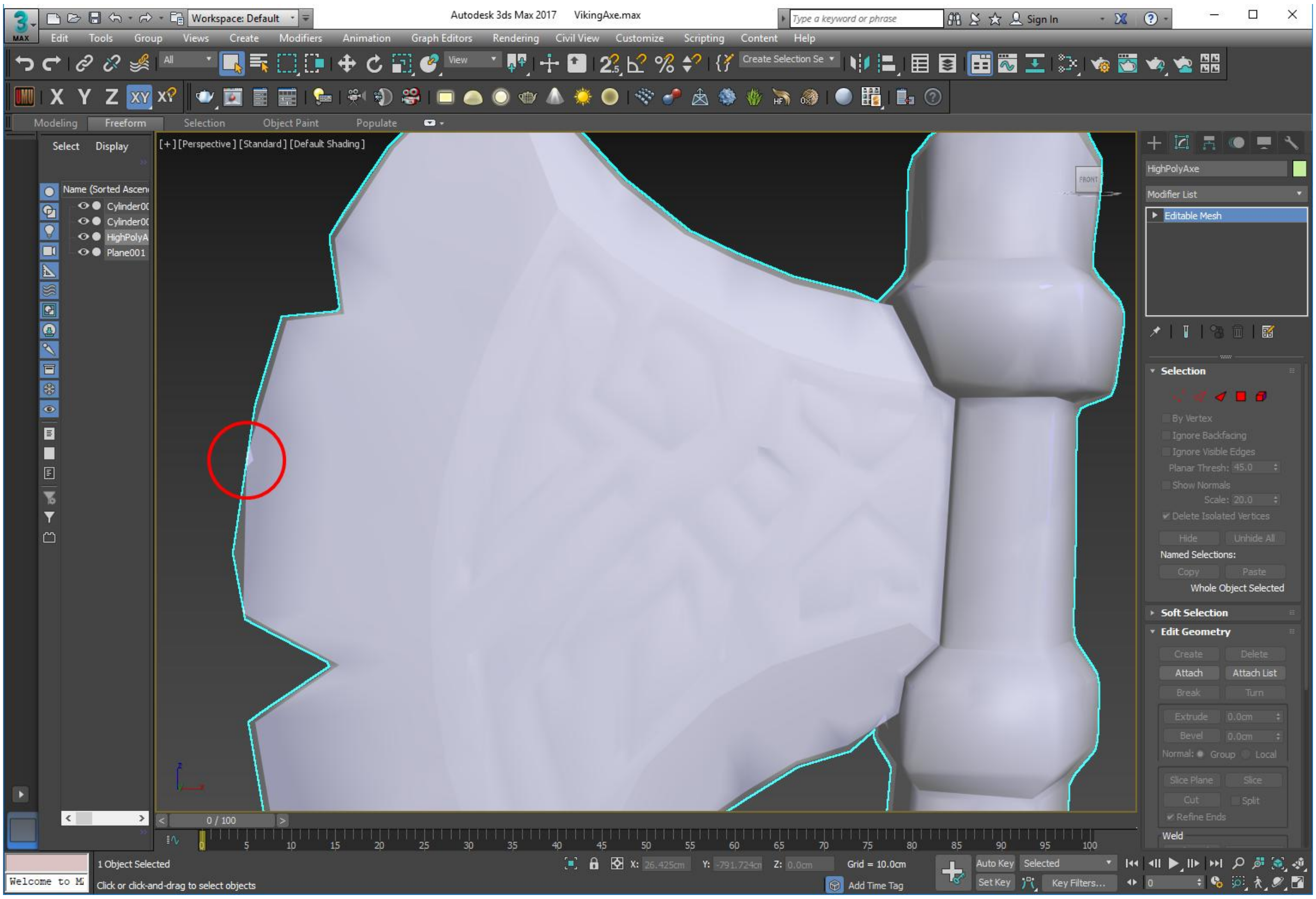
选择高模斧头，按 Alt + X 让它变成透明



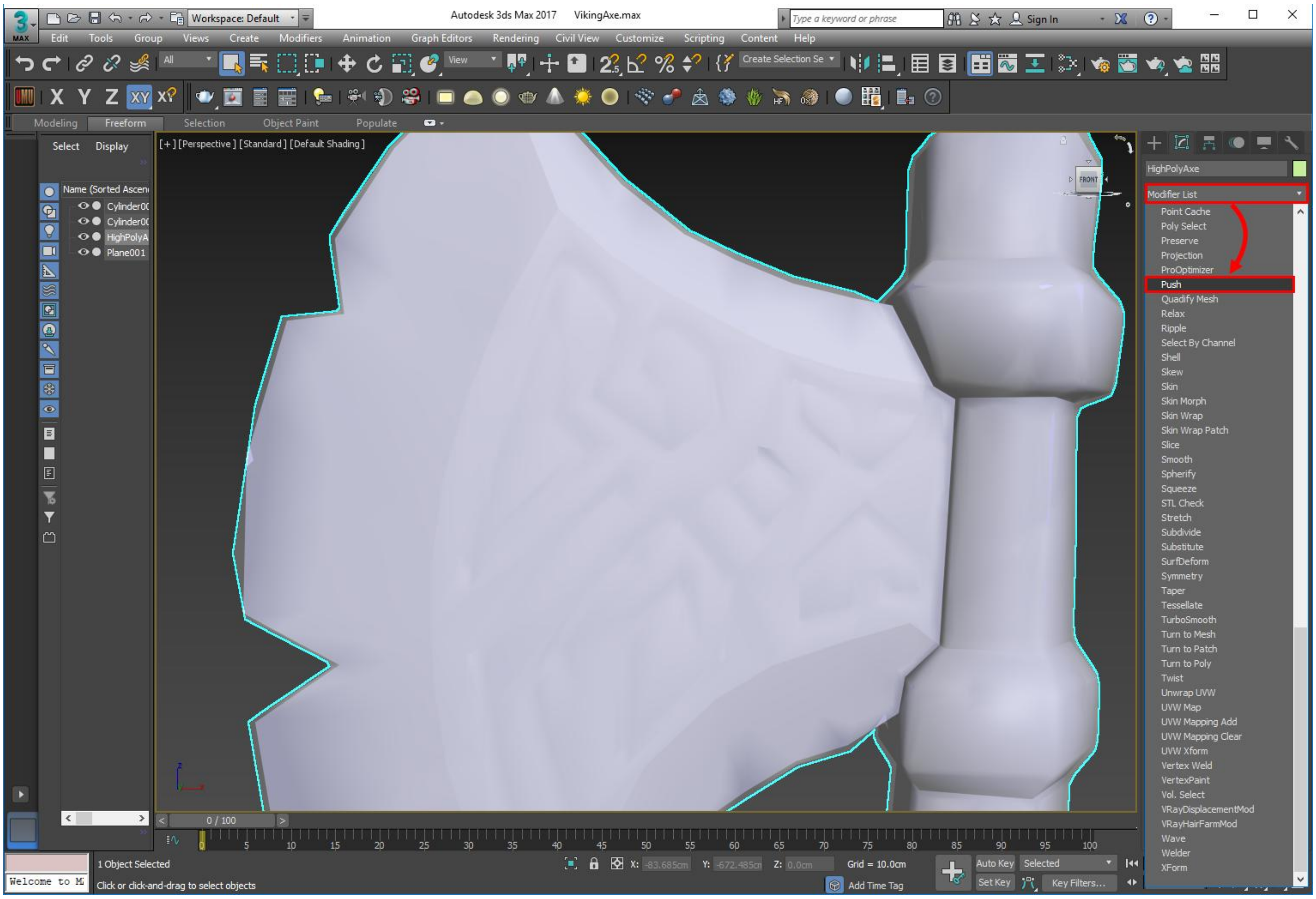
变成透明之后，放大，确保高模斧头完全包住低模斧头



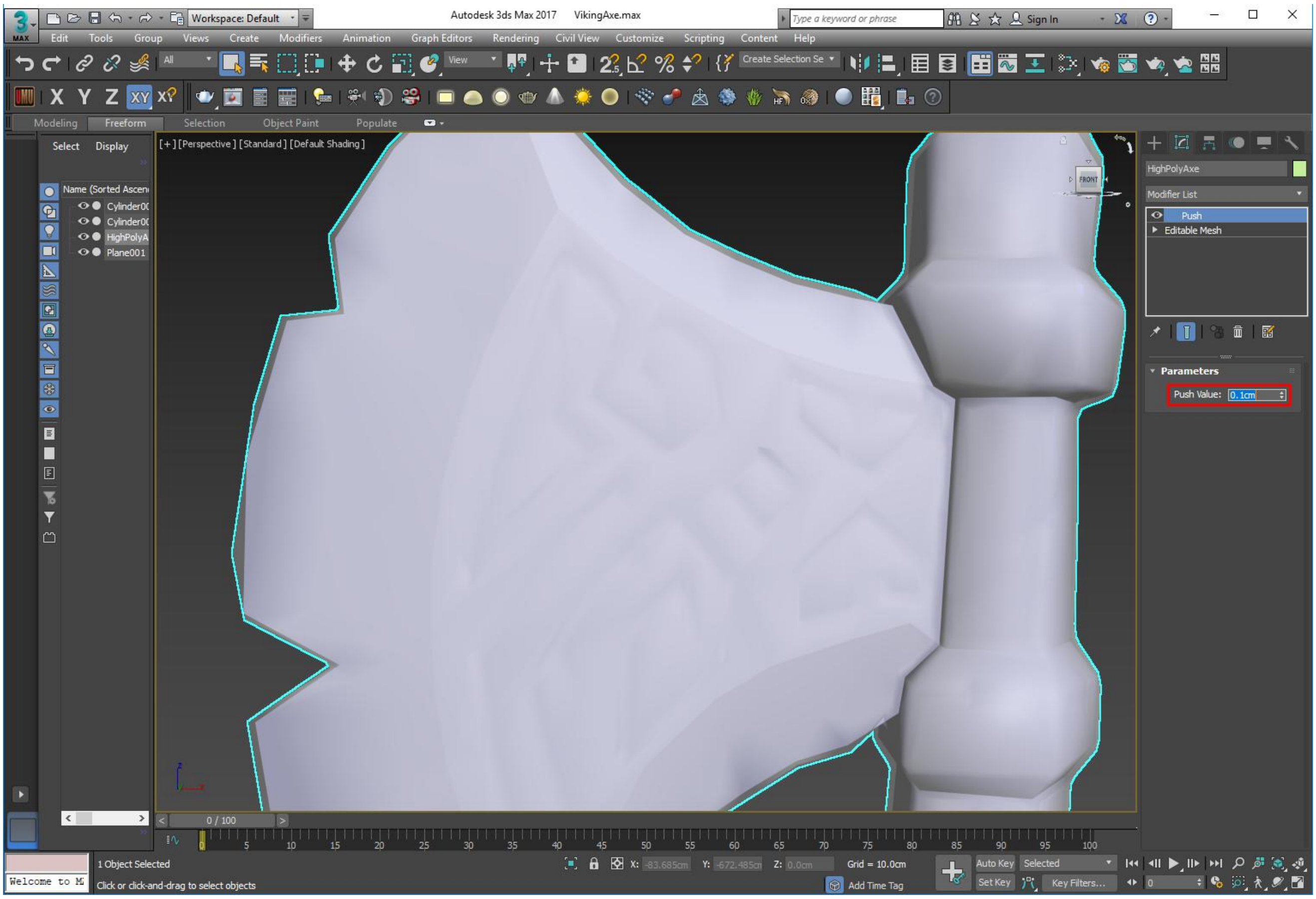
看看这里，如果有些地方没有办法包完，我们需要使用 Modifier List → Push



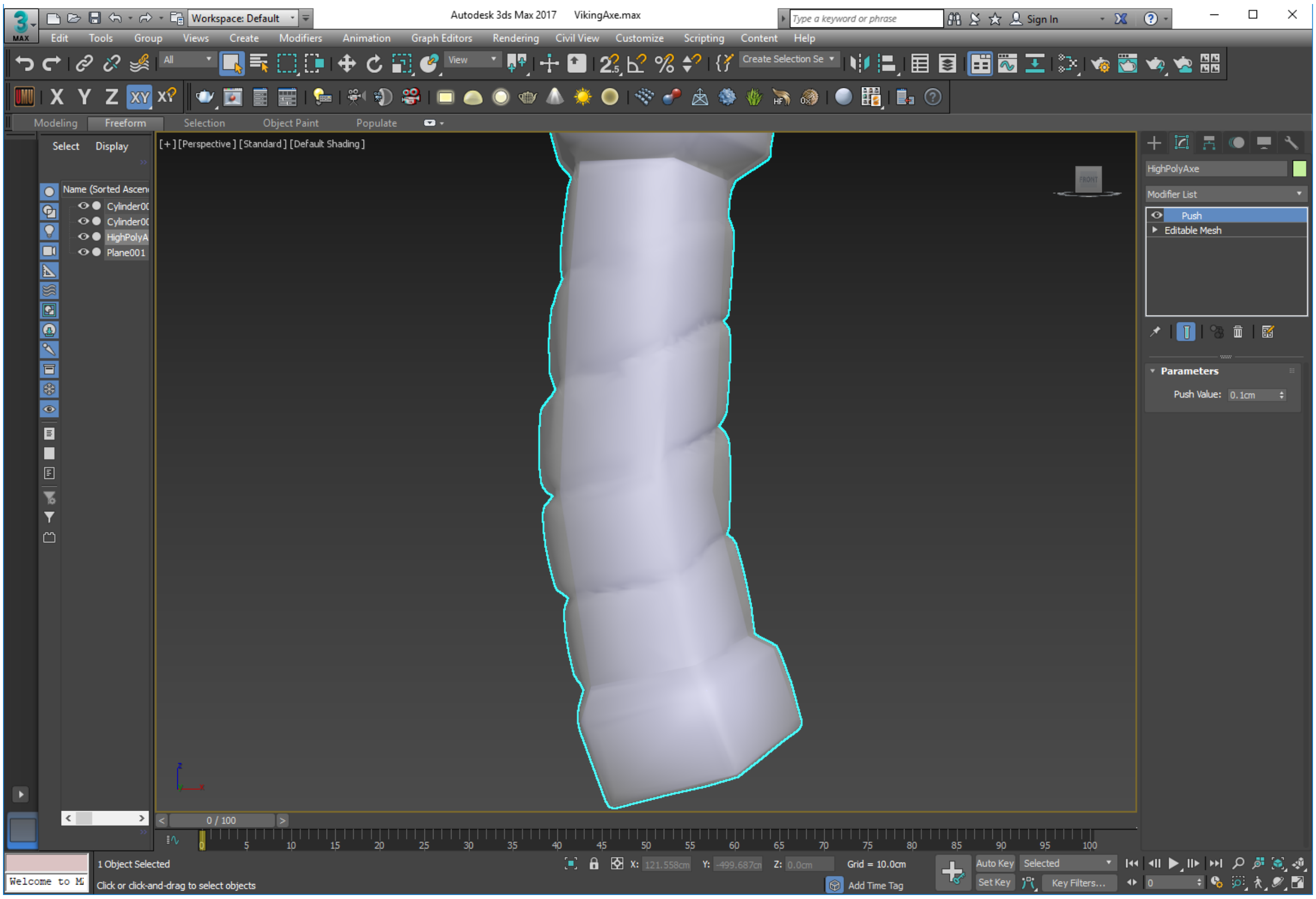
Modifier List → Push



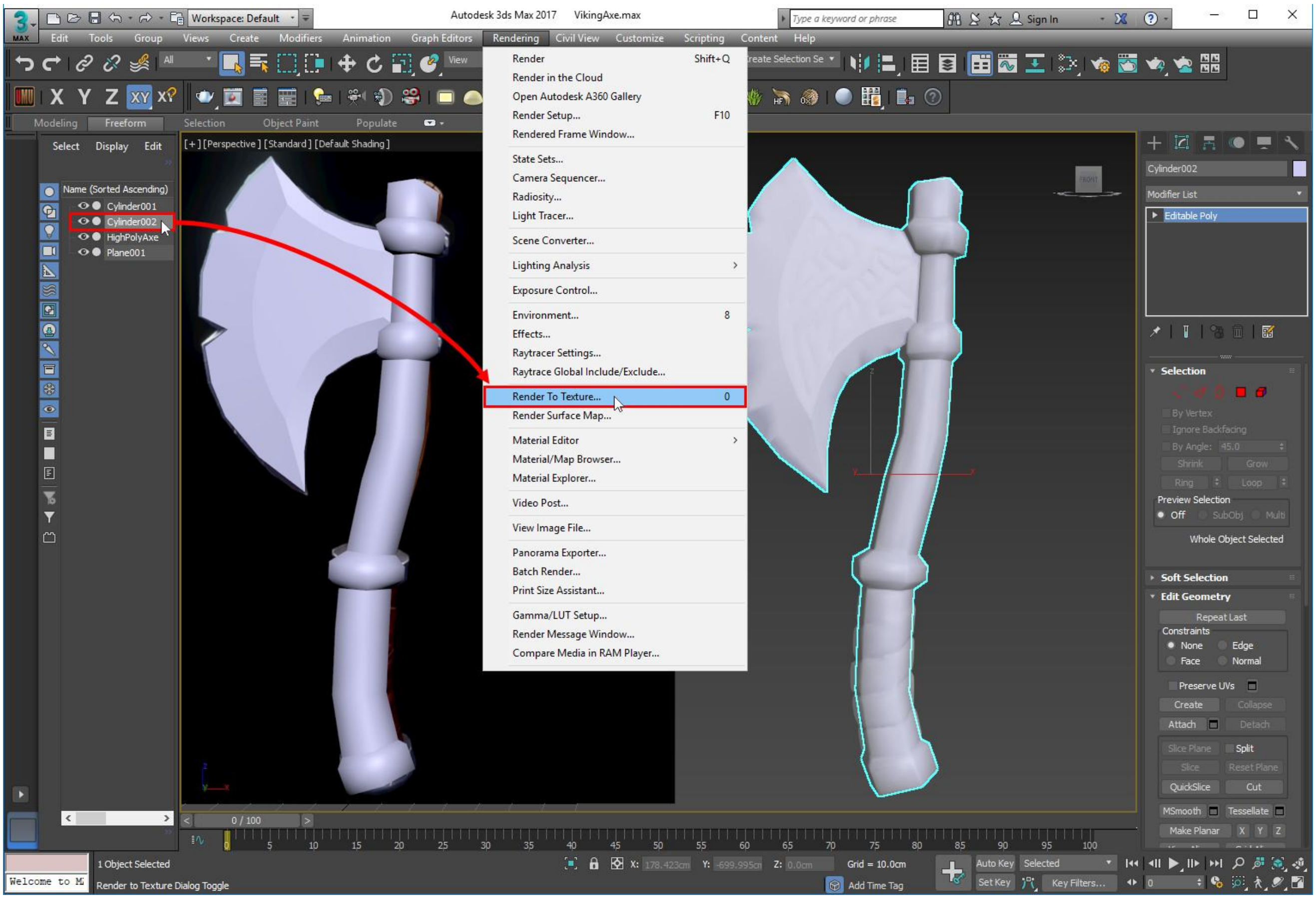
Push value: 0.1cm (加一点点，如果完全包完，就可以了)



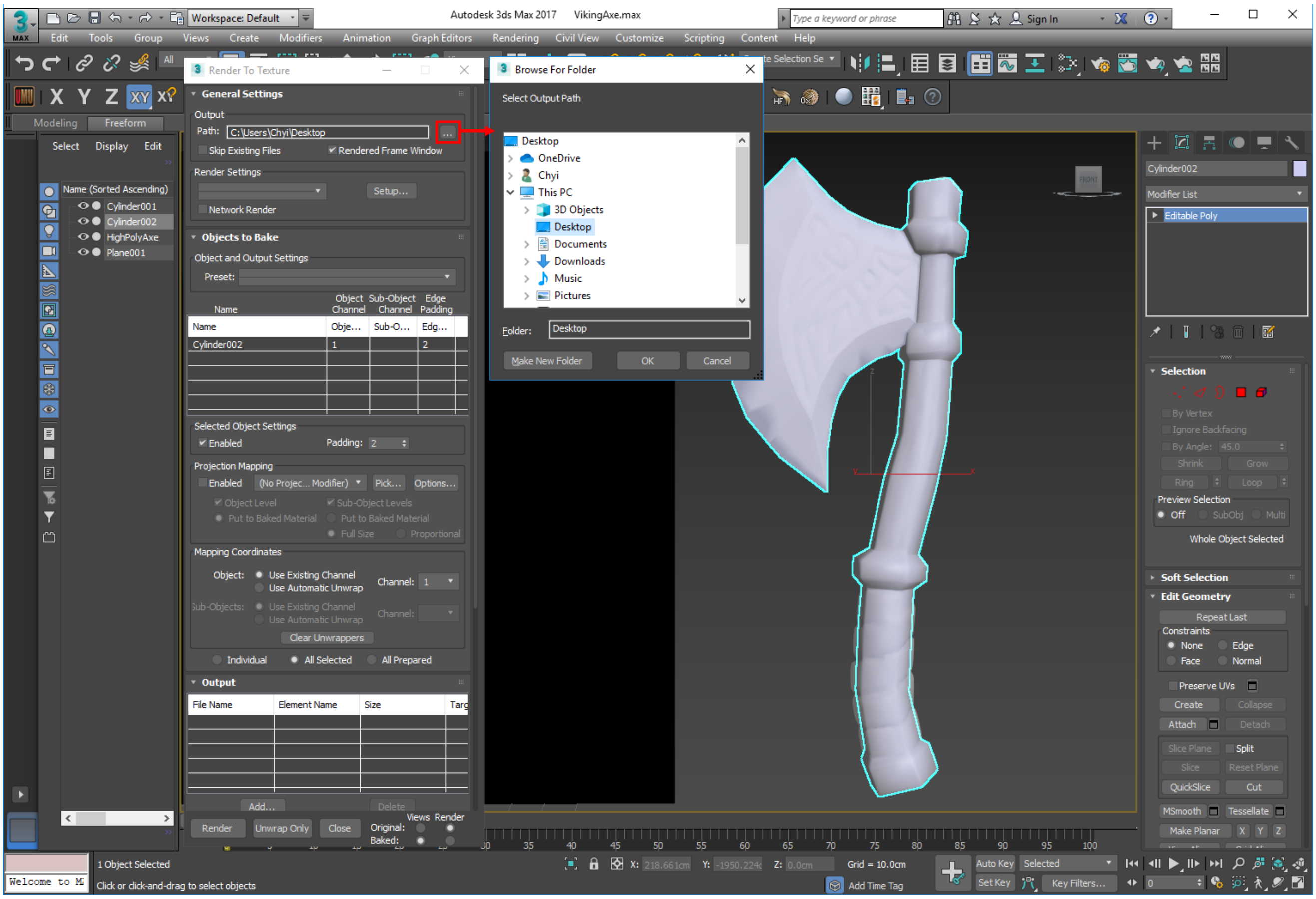
检查其他部分，确保完全包住



选择里面的低模斧头，然后按 Rendering → Render To Texture

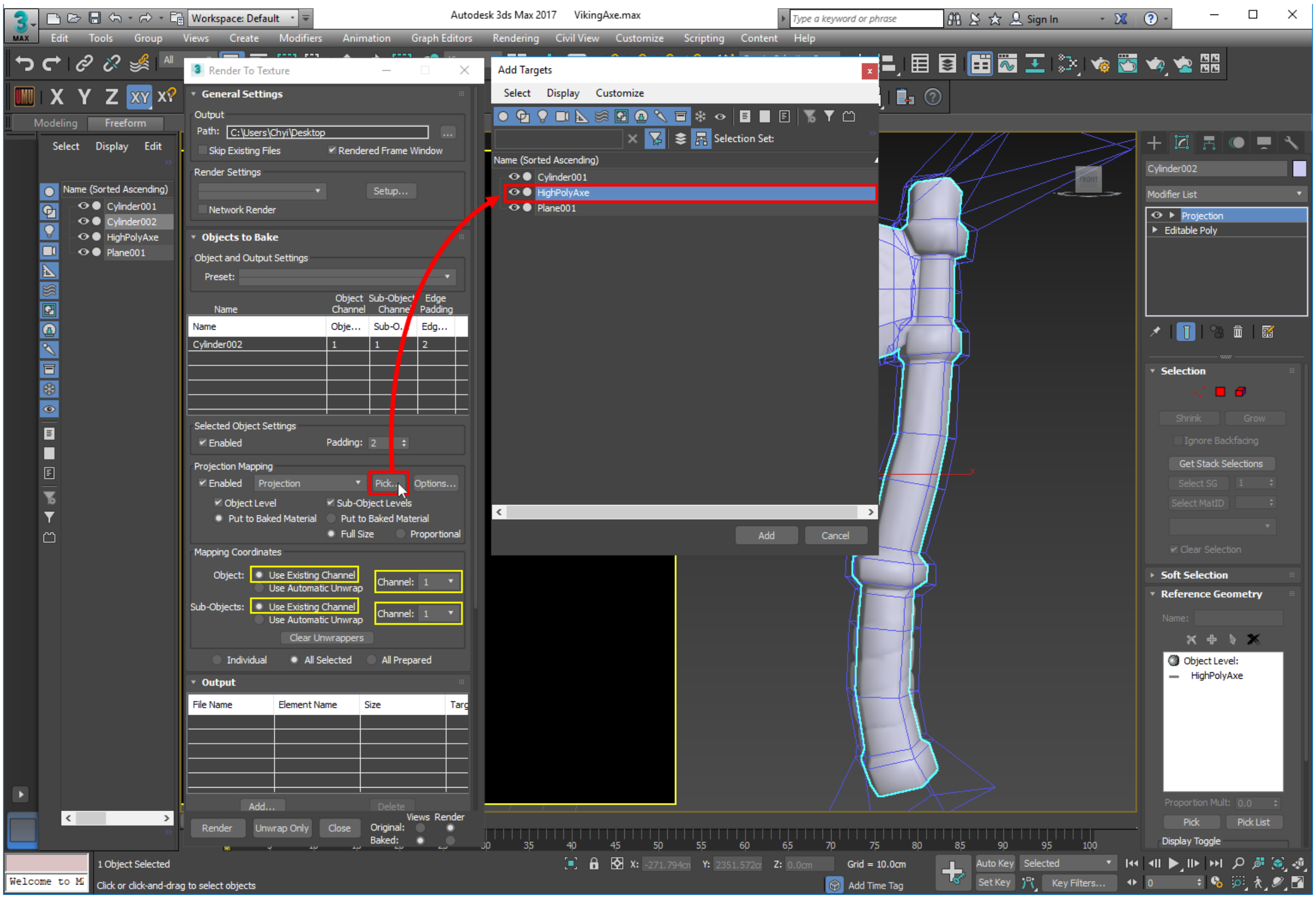


选择输出文件夹 (Output) 来存储 normal map



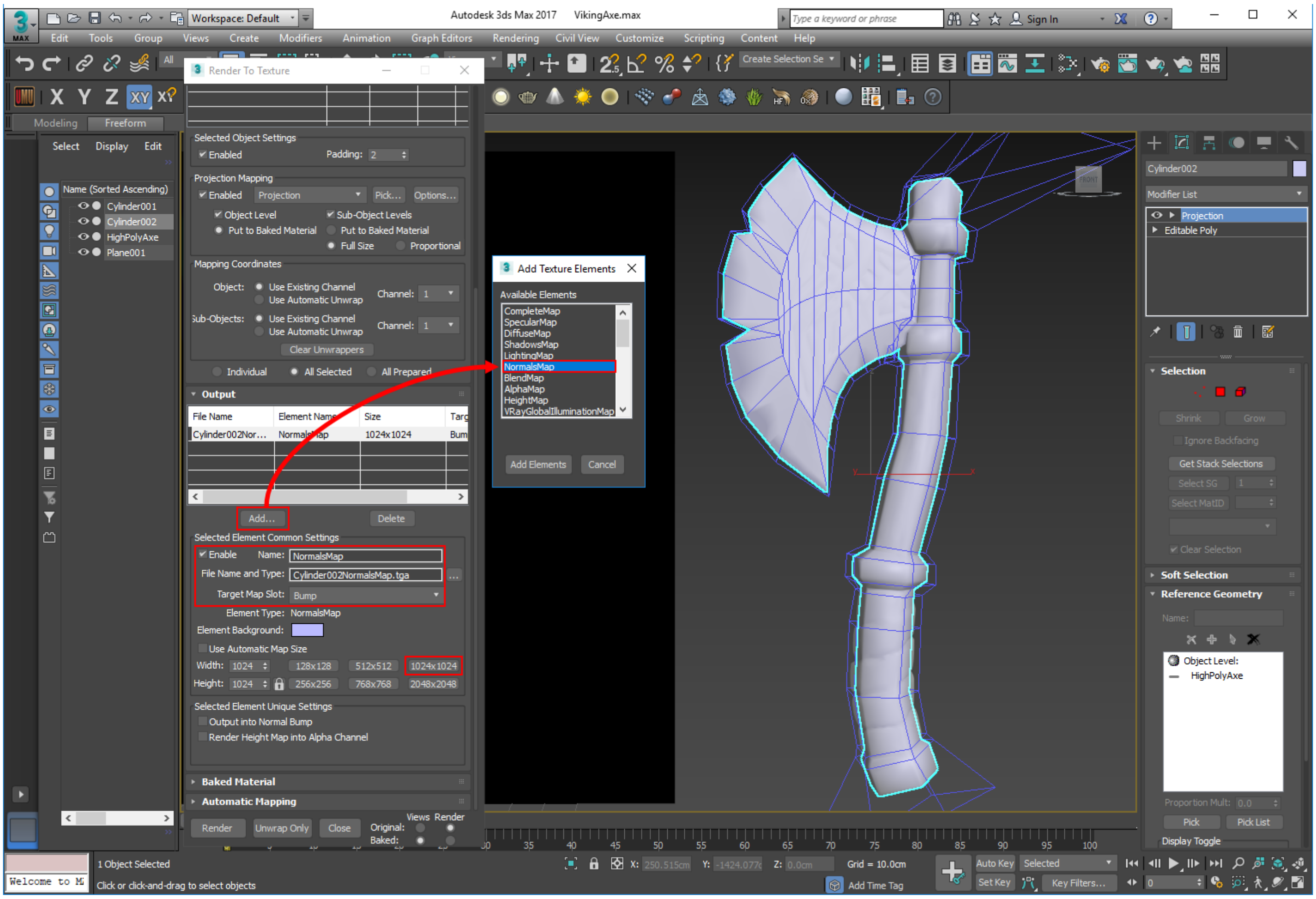
按下“Pick”然后选择高模斧头 (HighPolyAxe)

还有，下面两个都要选“Use Existing Channel”和 Channel: 1

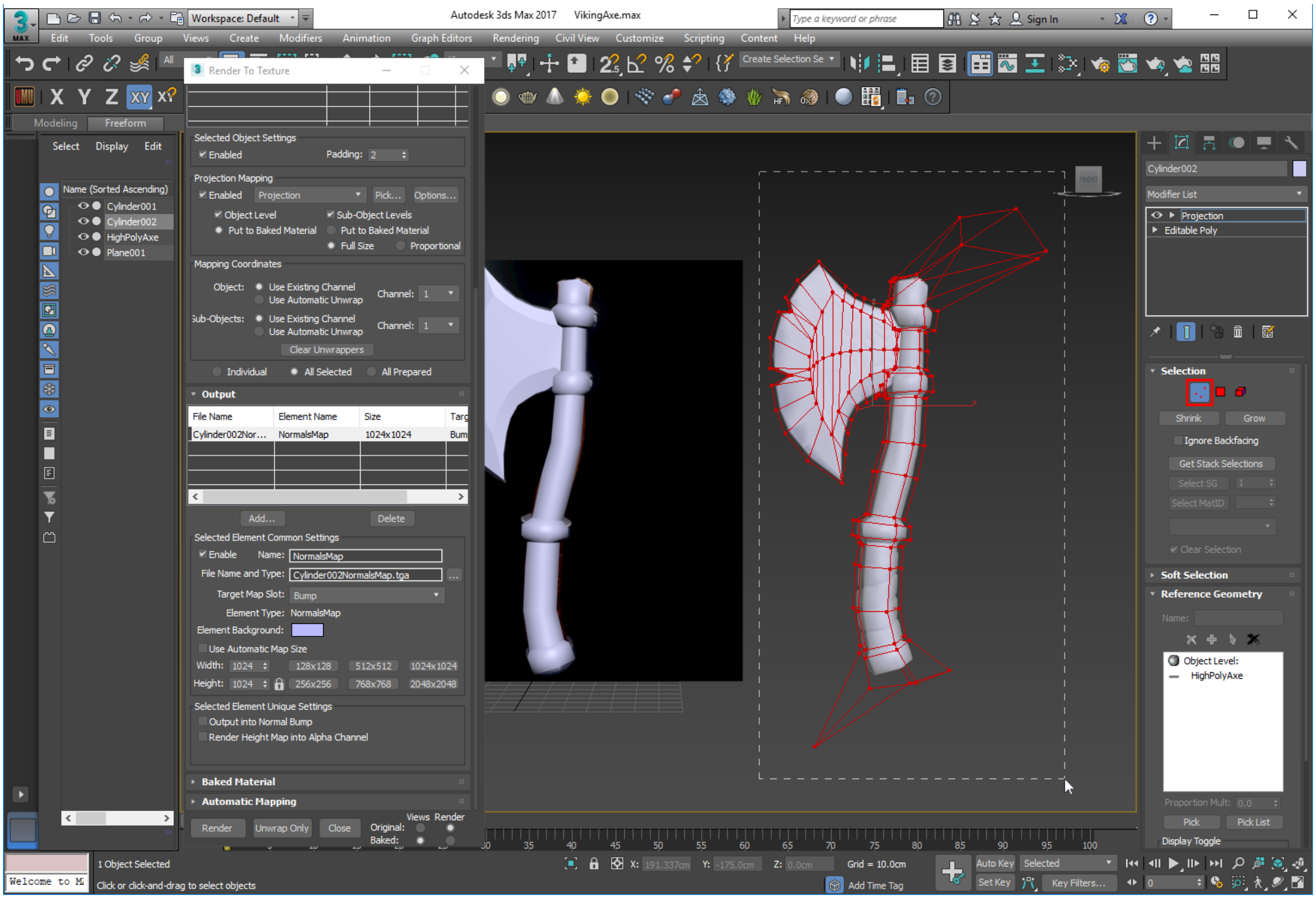


在 Output 下面，按下“Add...”然后选择 NormalsMap

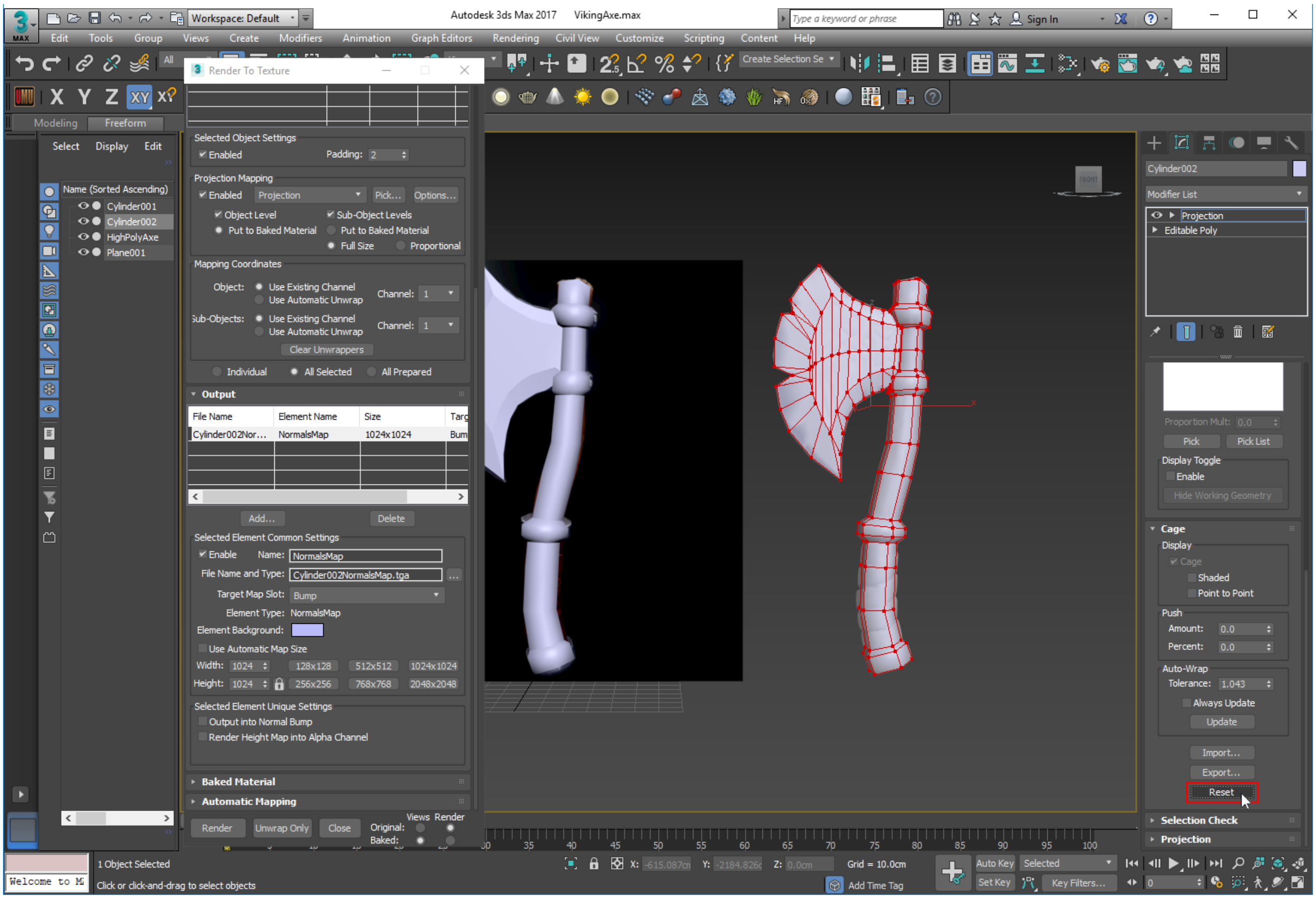
还有，选择 1024 x 1024 用在 Normal map 贴图大小



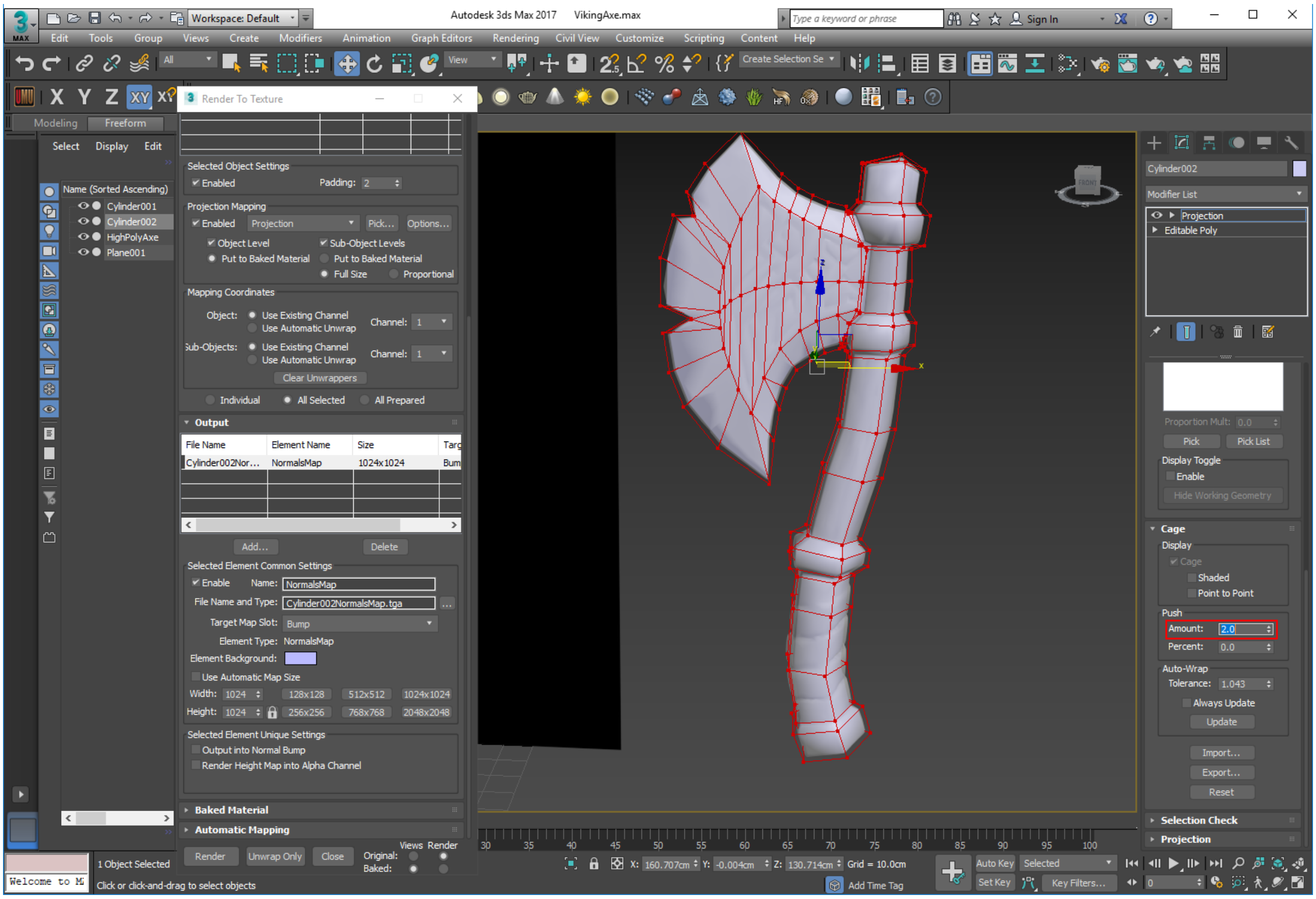
在 右边的 Modifiy panel 下面，选择三个点 (Cage)，然后框选所有的点



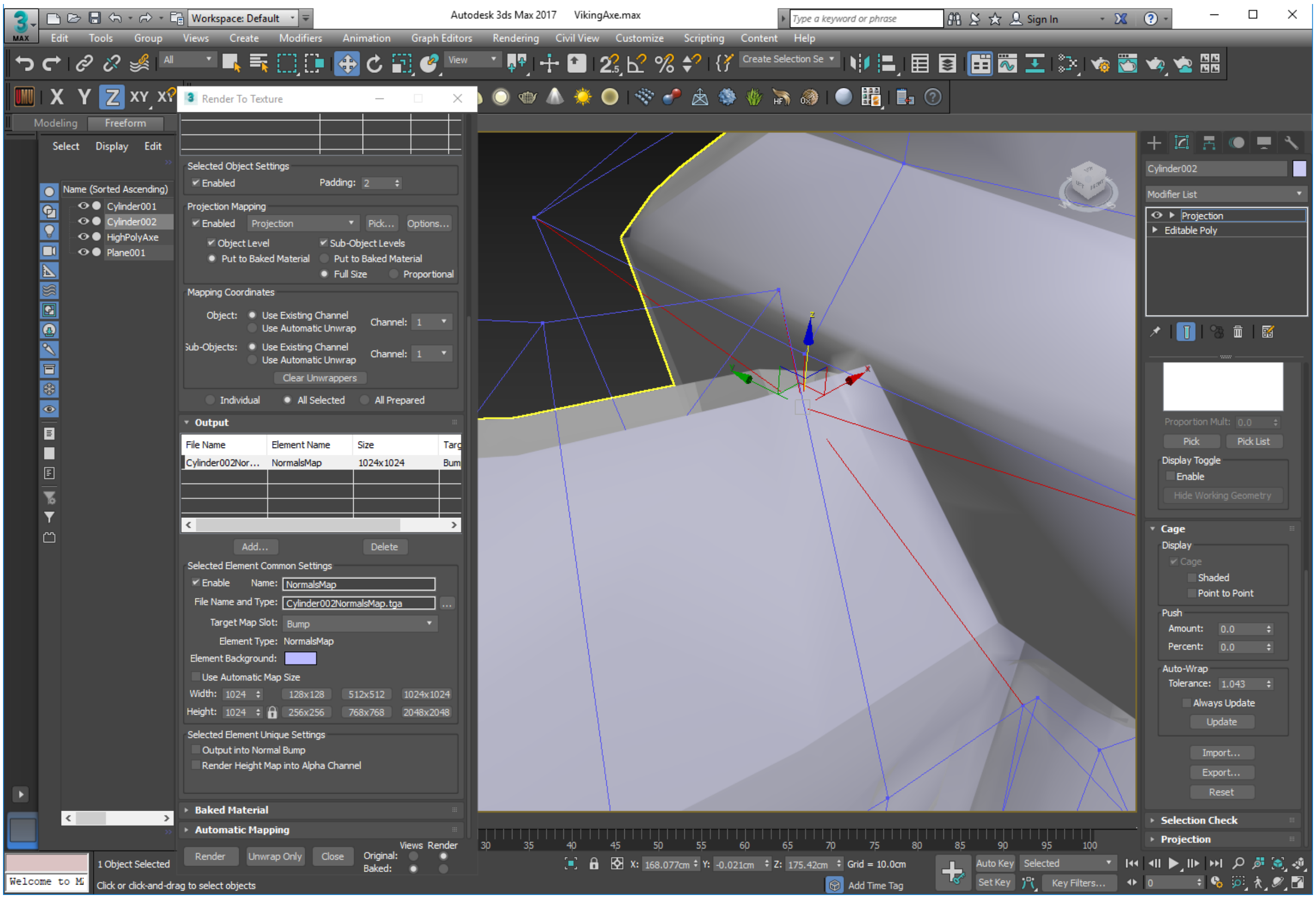
滑下来，然后按“Reset”按钮



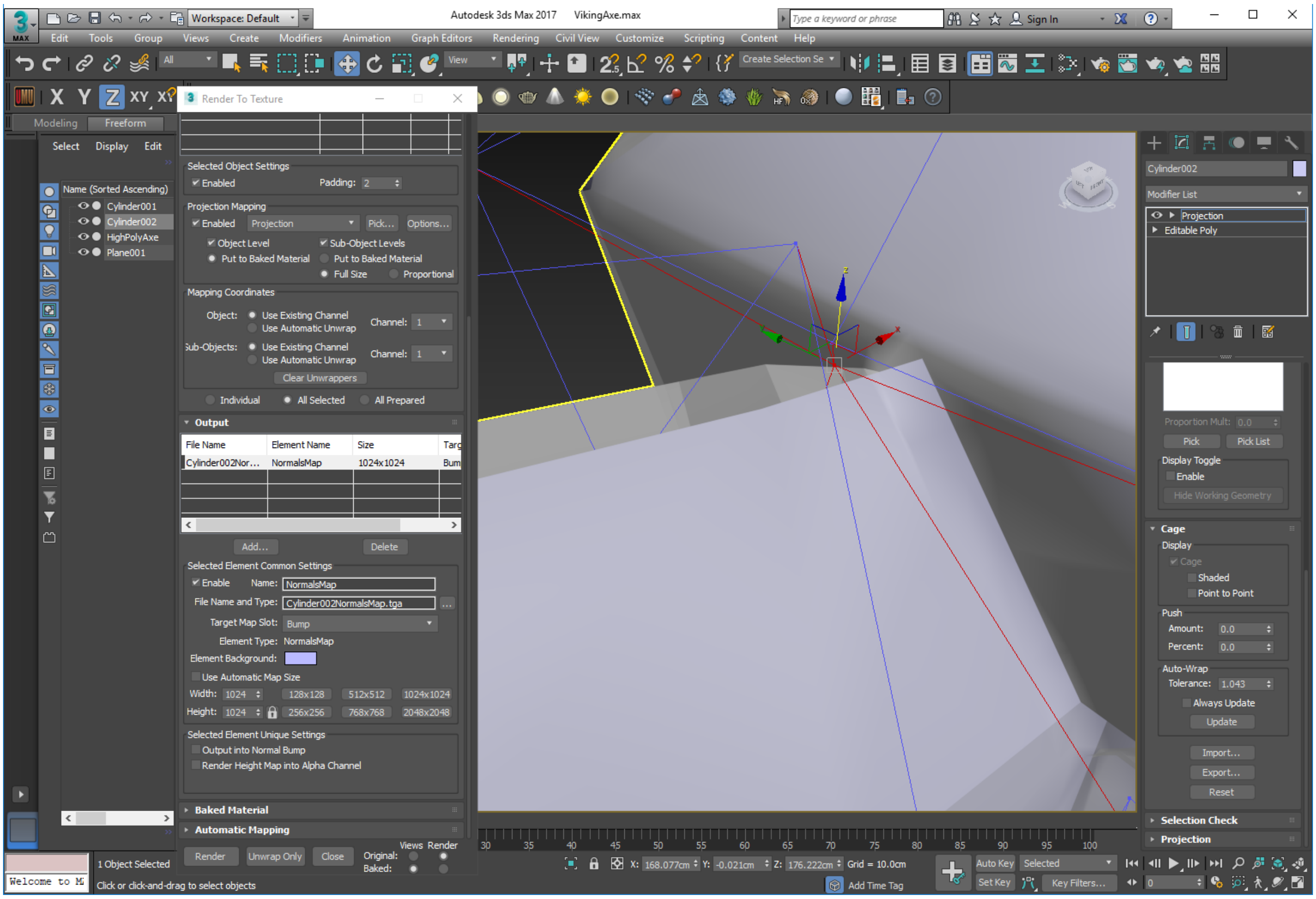
在 Push 下面的 Amount，添加一点点的数目，直到红色的点和线完全包住



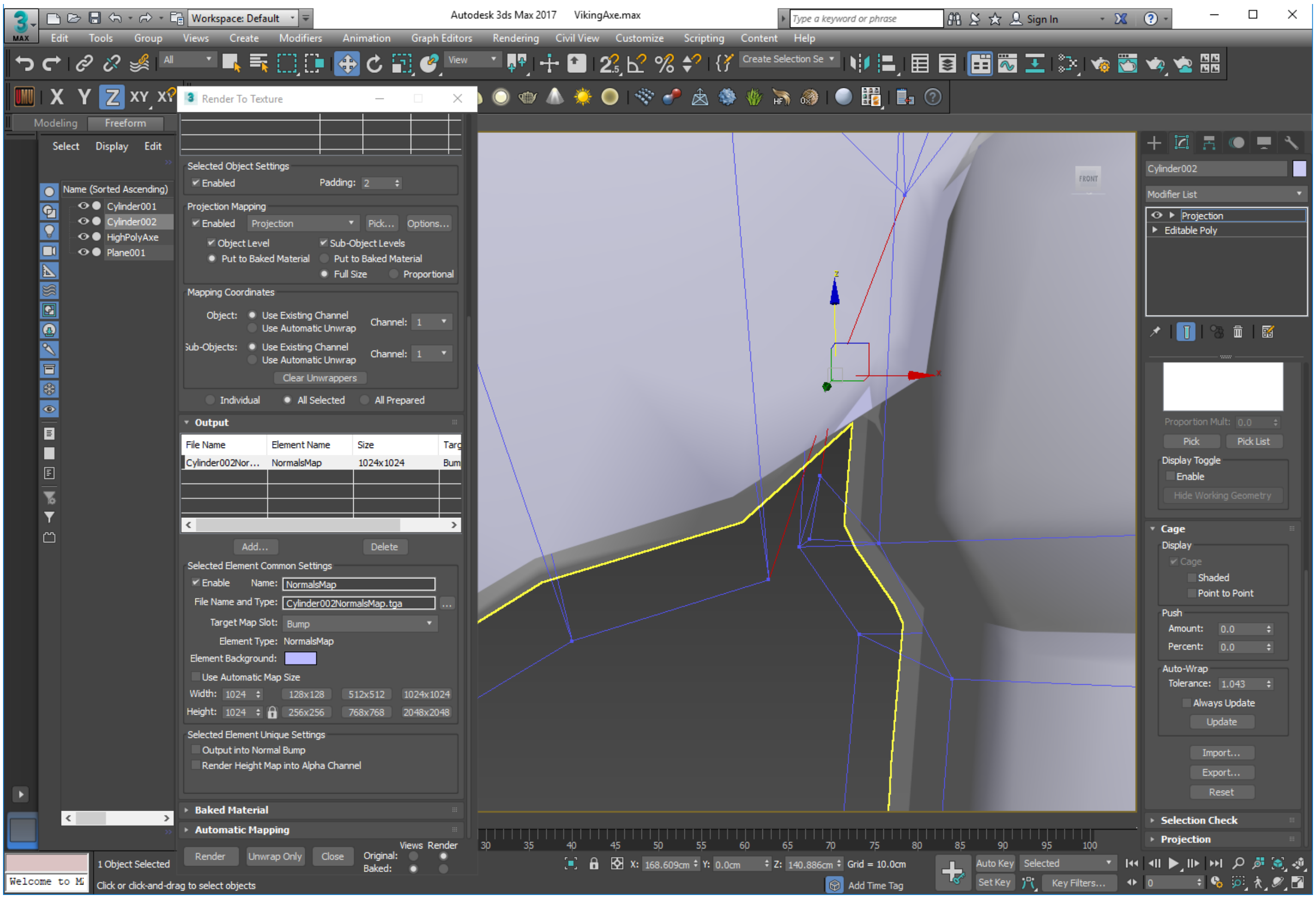
之后在每个部位放大，检查每个部分的点，确保所有的点是在外面



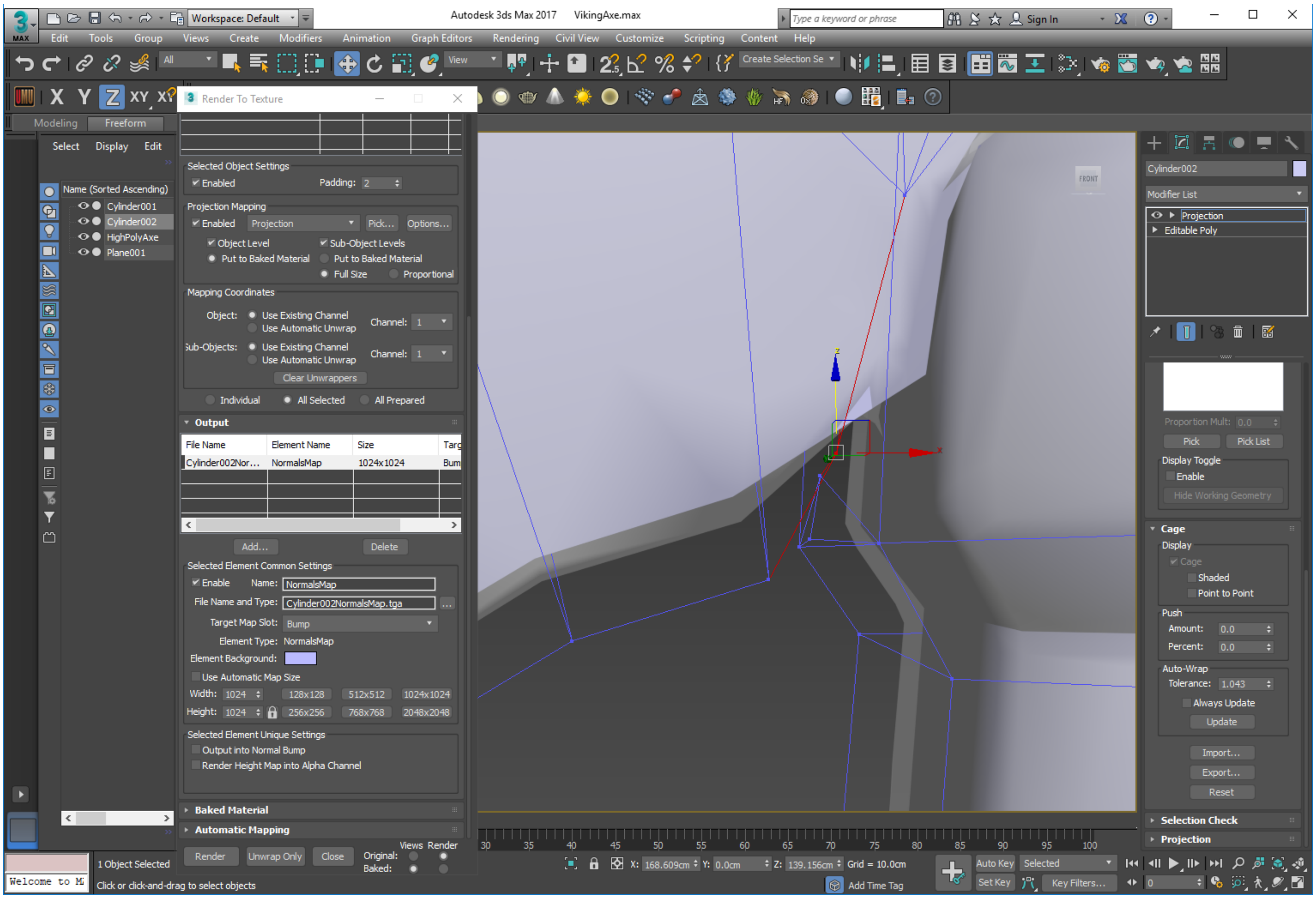
如果有任何点是在里面，选择然后把点移到正确的位子



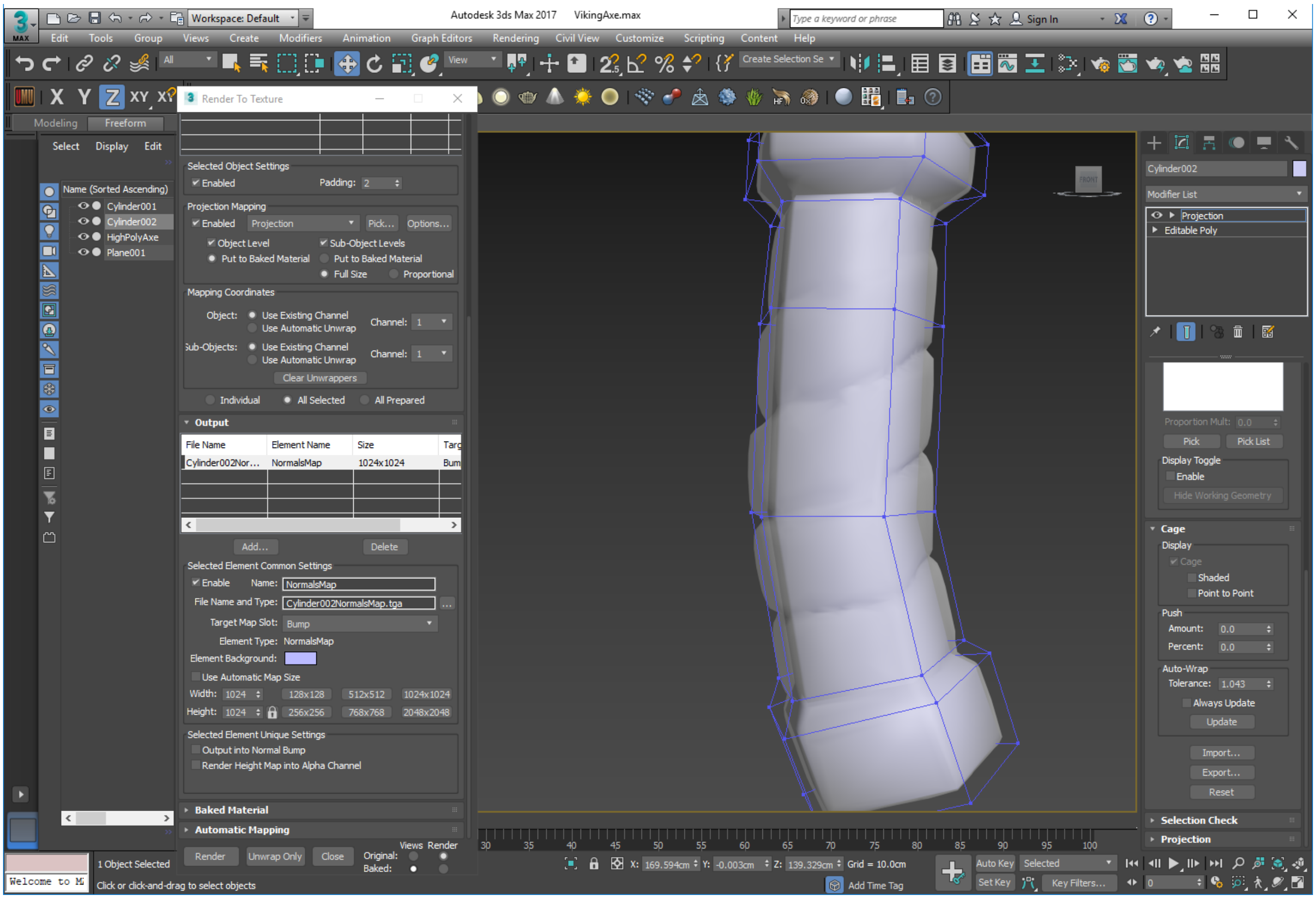
这里也有一个点 (cage) 在里面



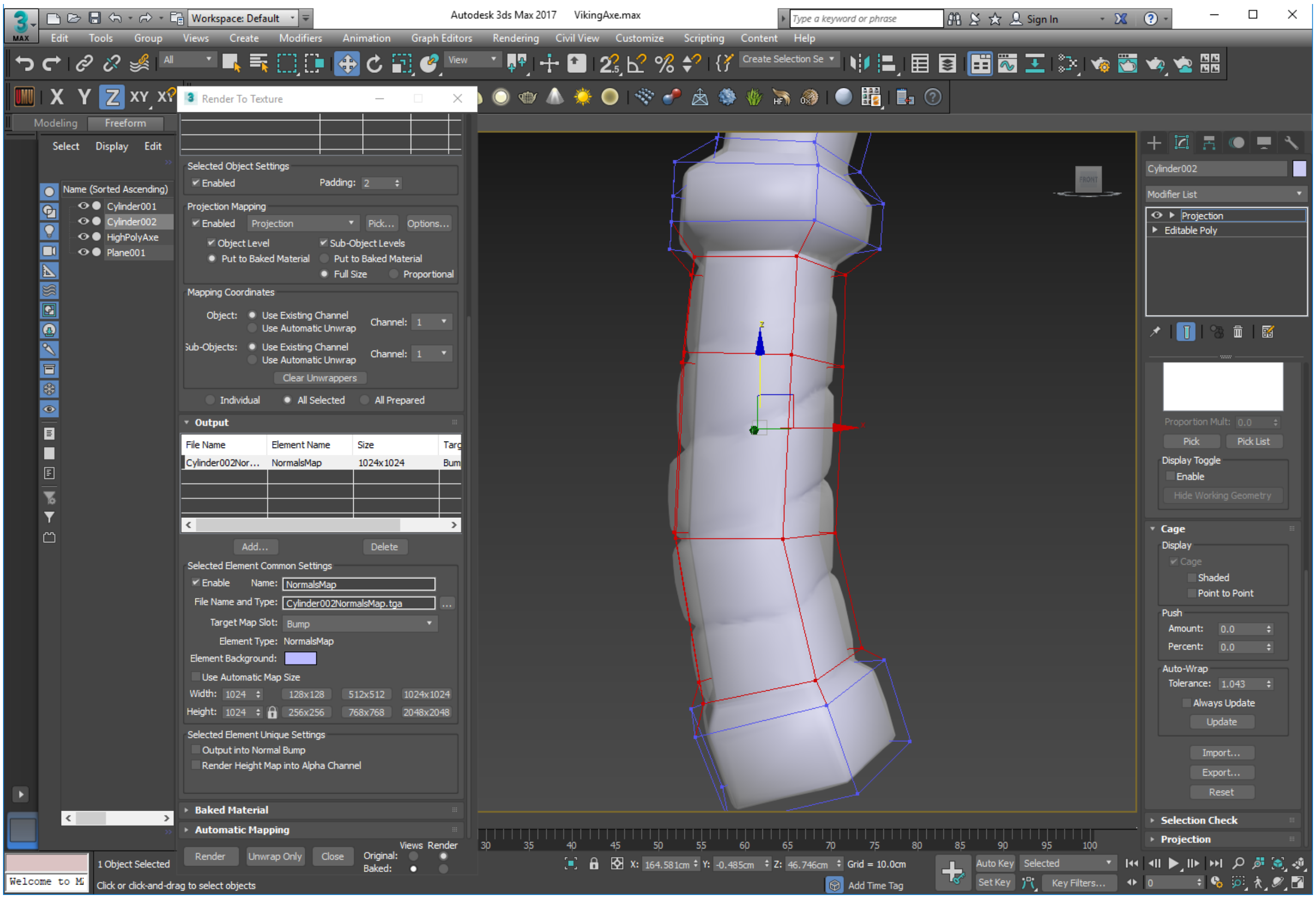
把点拉下来



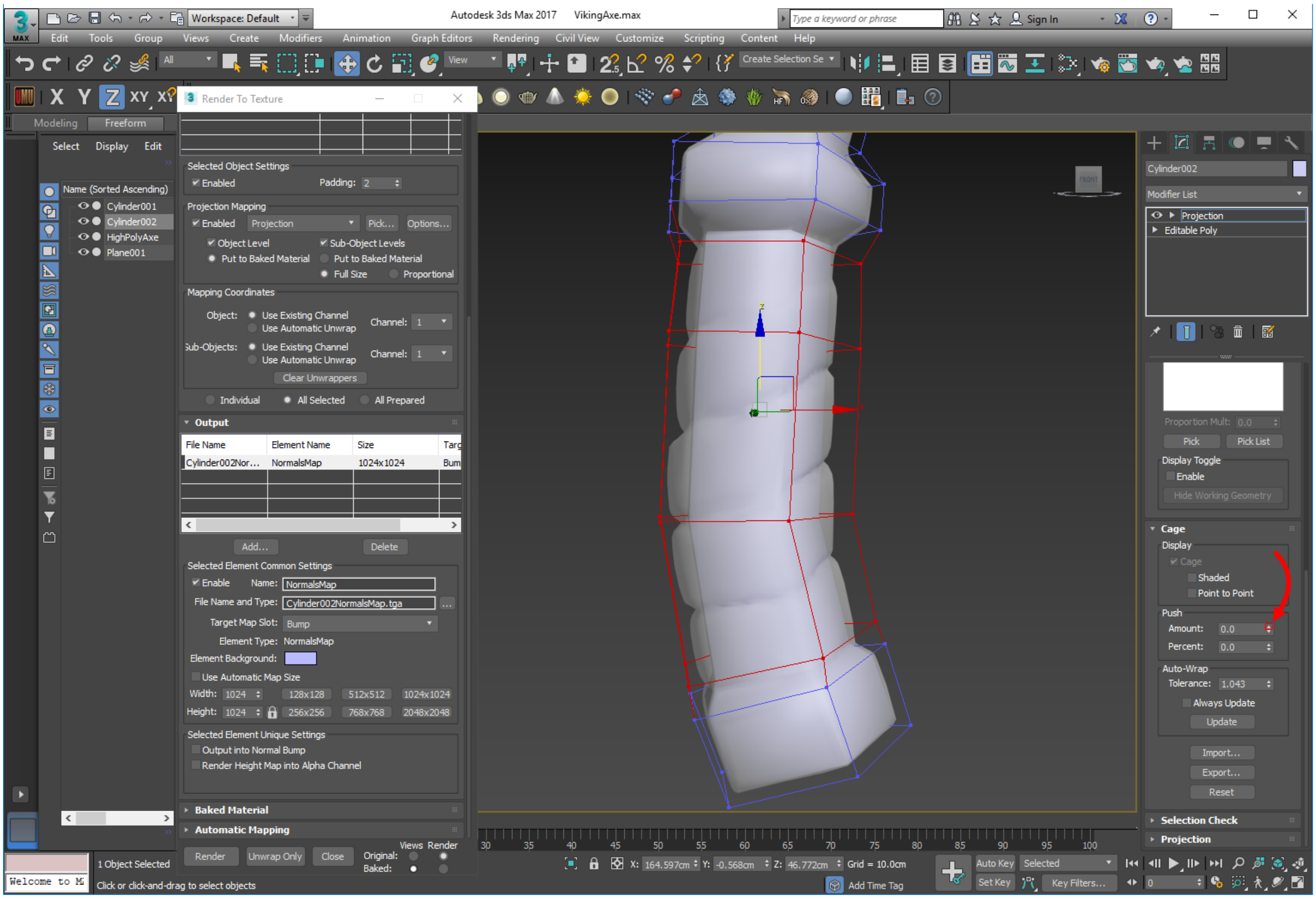
检查手把的部分，可以看到这里完全没有包住



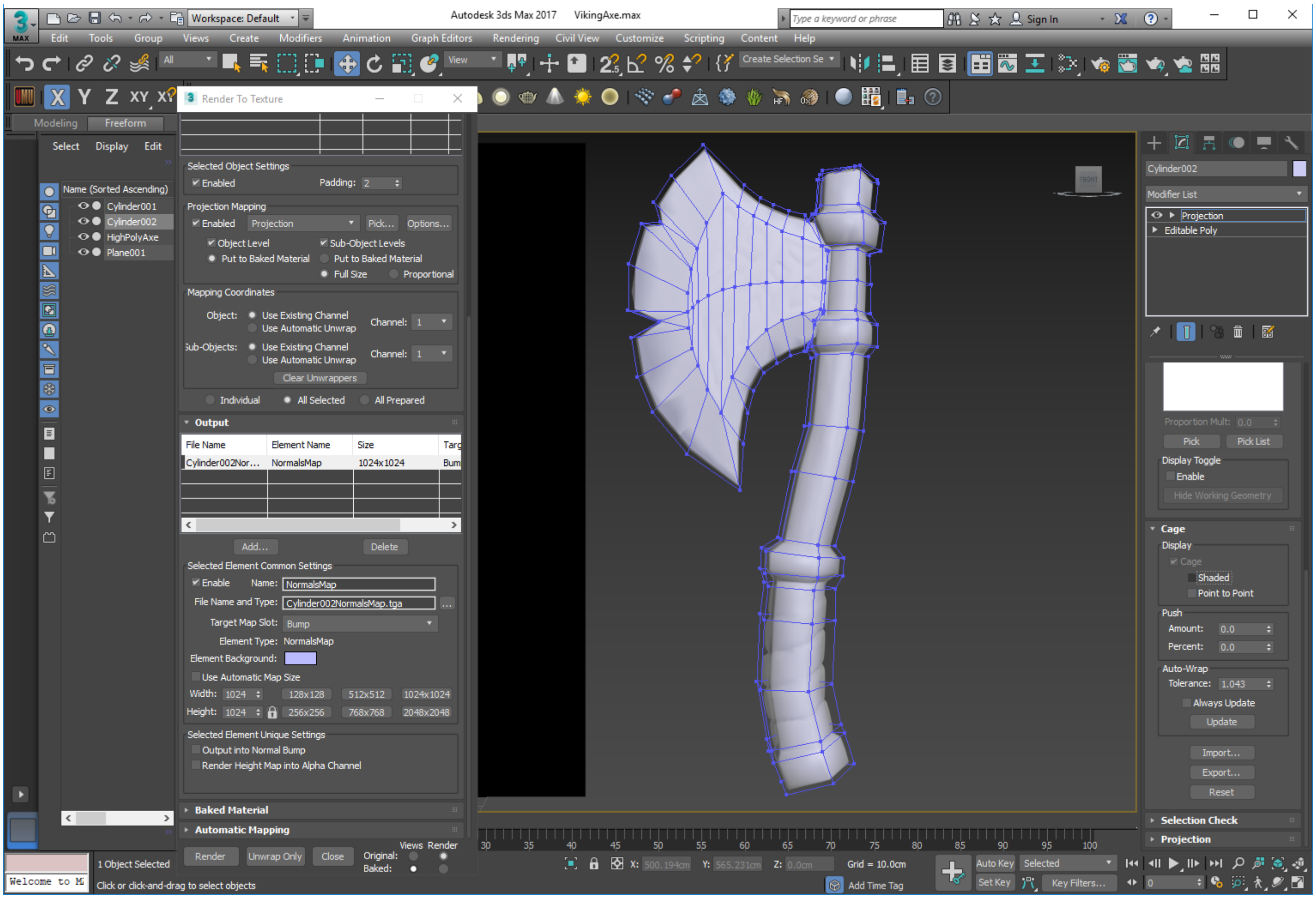
选择点 (cage)



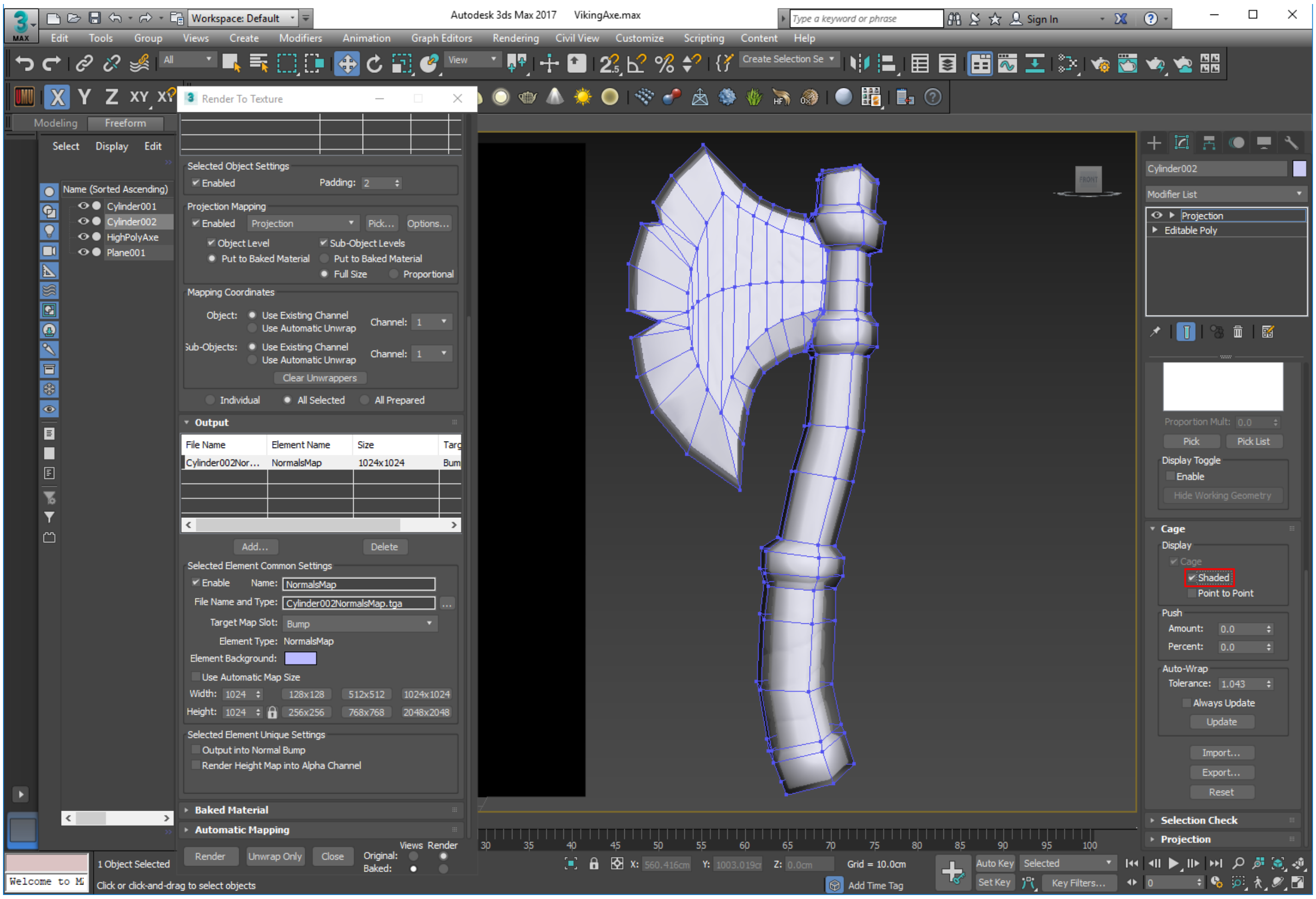
按 ▲ 慢慢增加 Amount一直到完全包住为止



完成了

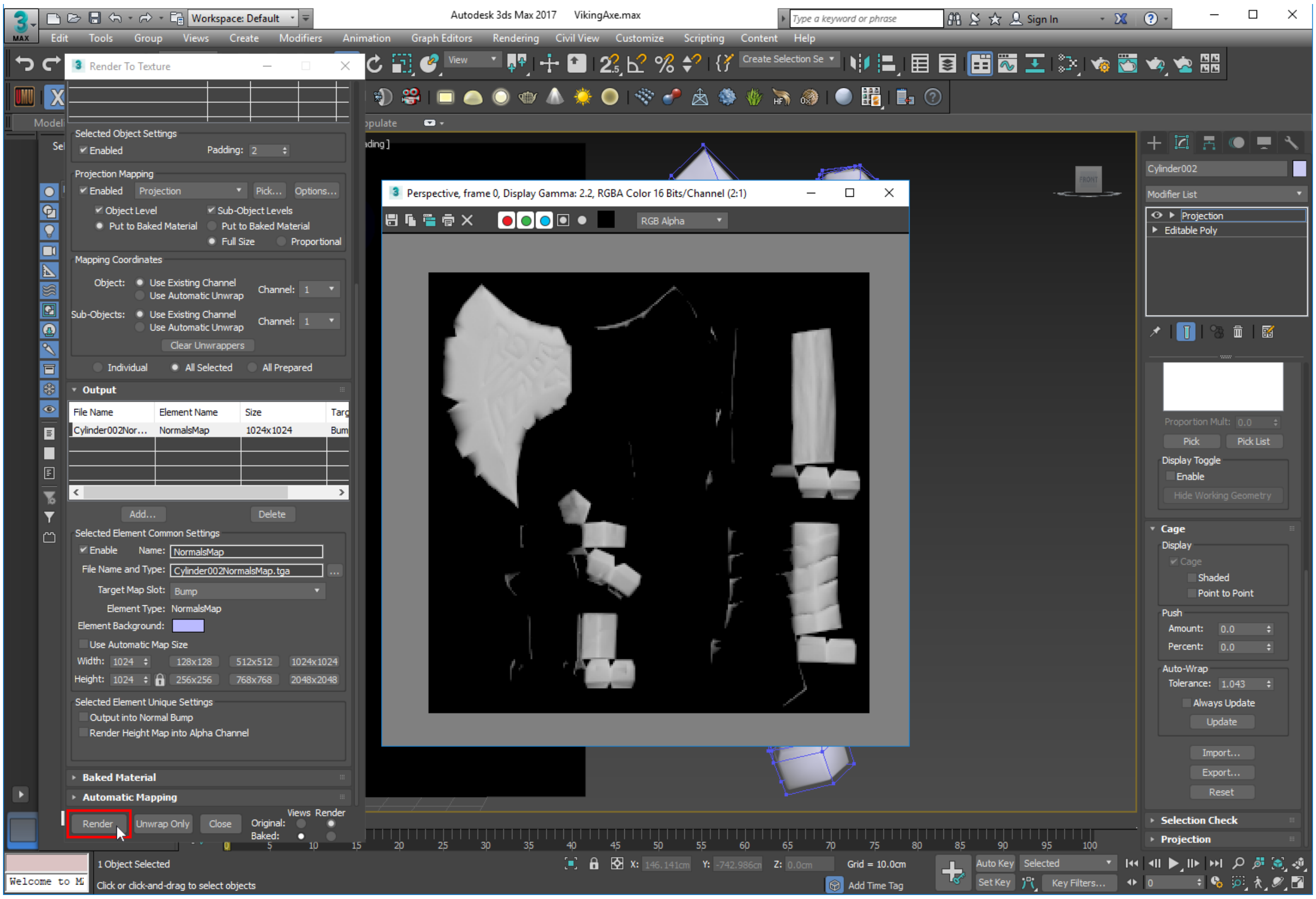


如果还是担心的话，可以打勾 Shaded，再次检查

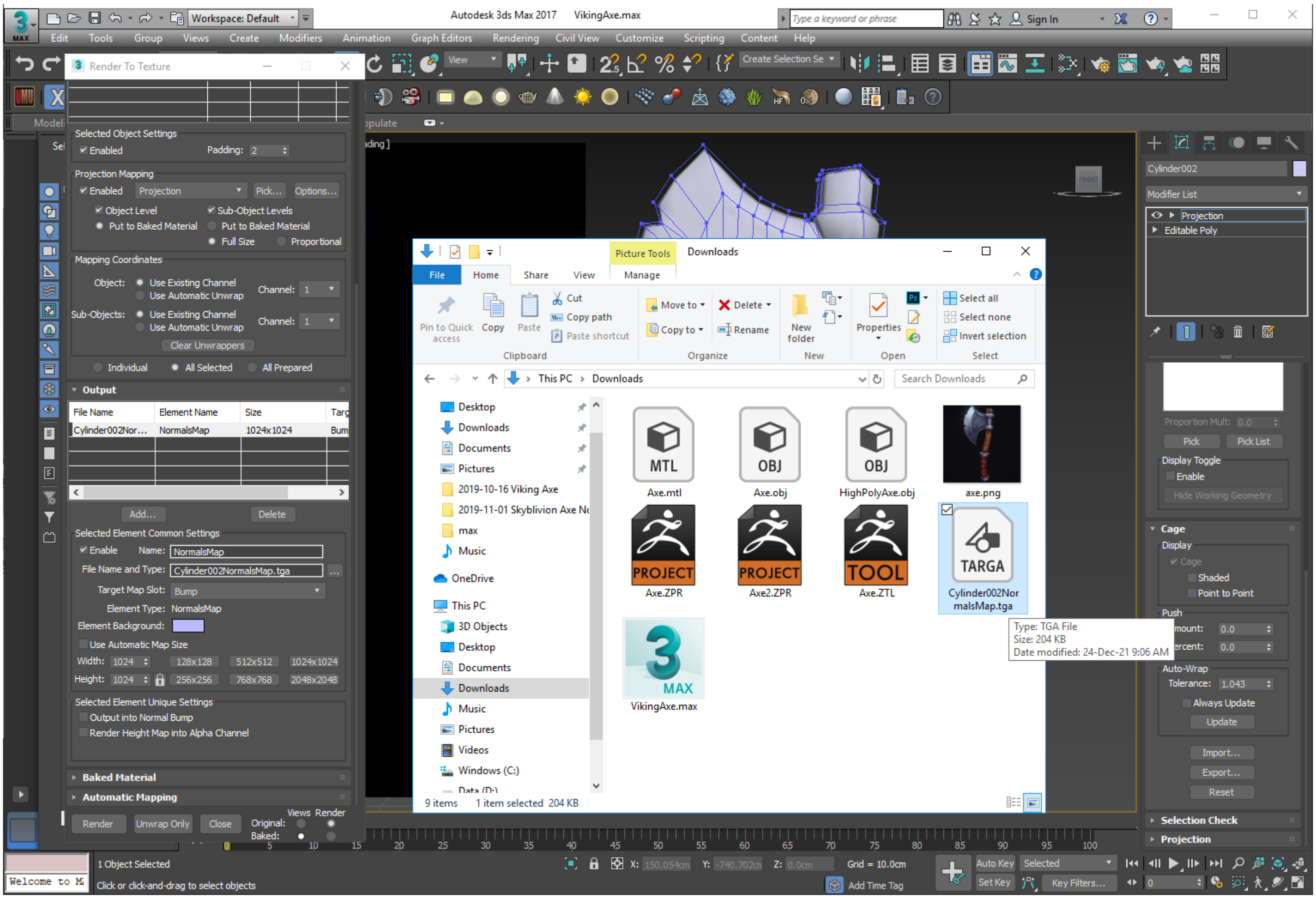


完成之后，按下 Render 按钮来渲染 normal map

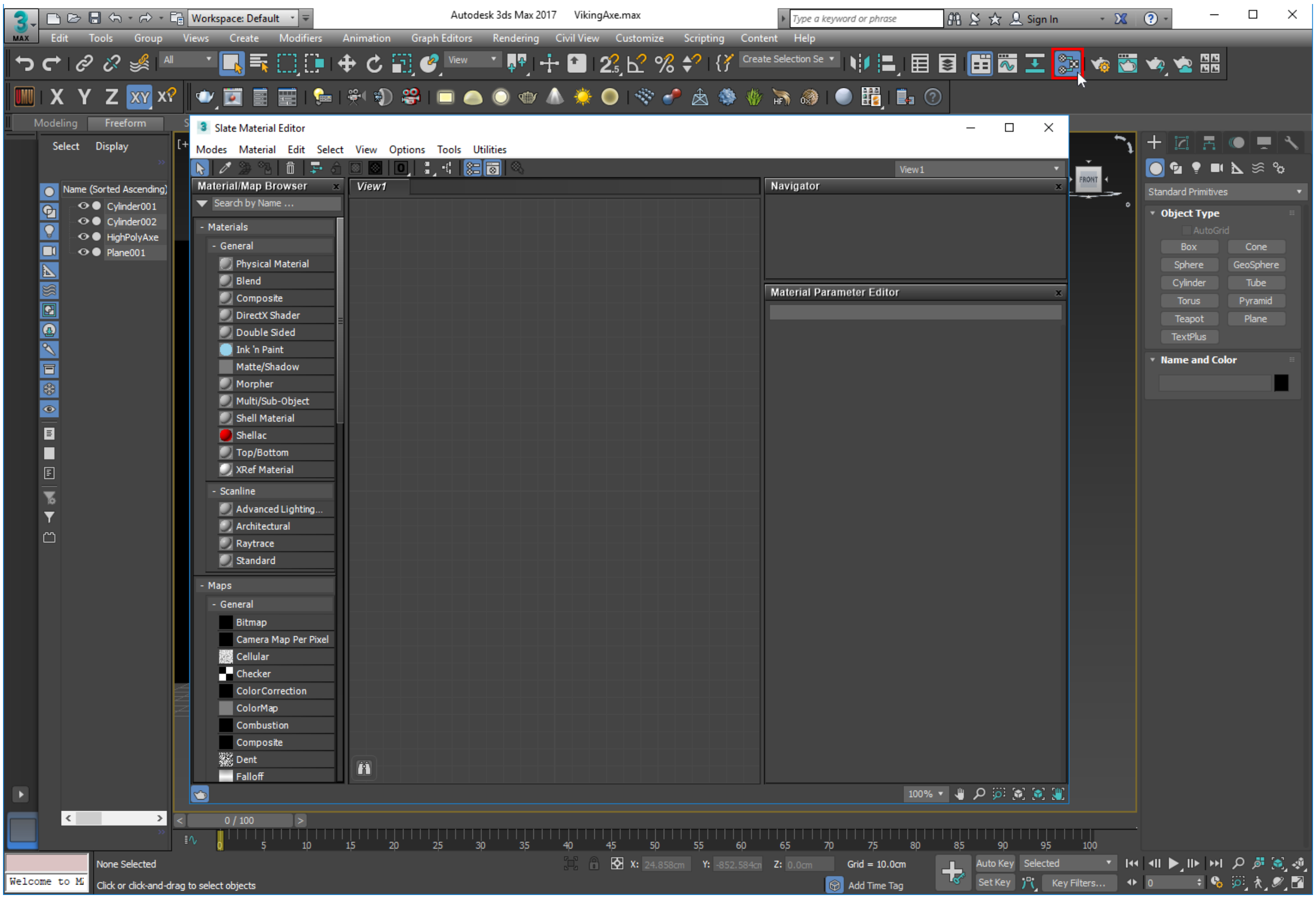
确保渲染的图完全没有红色，就可以了



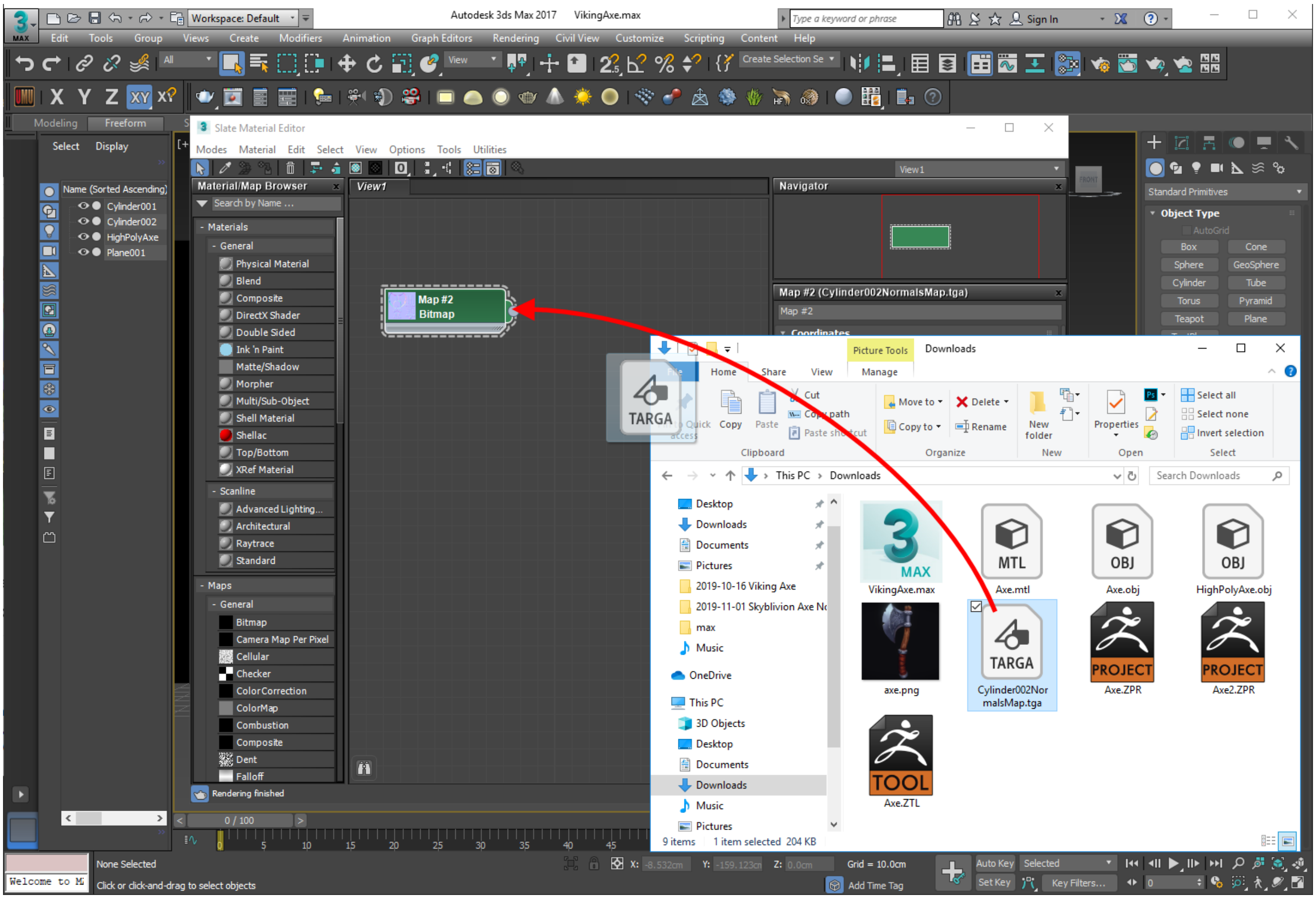
渲染完之后，检查输出的文件夹，你就可以看到 NormalsMap.tga



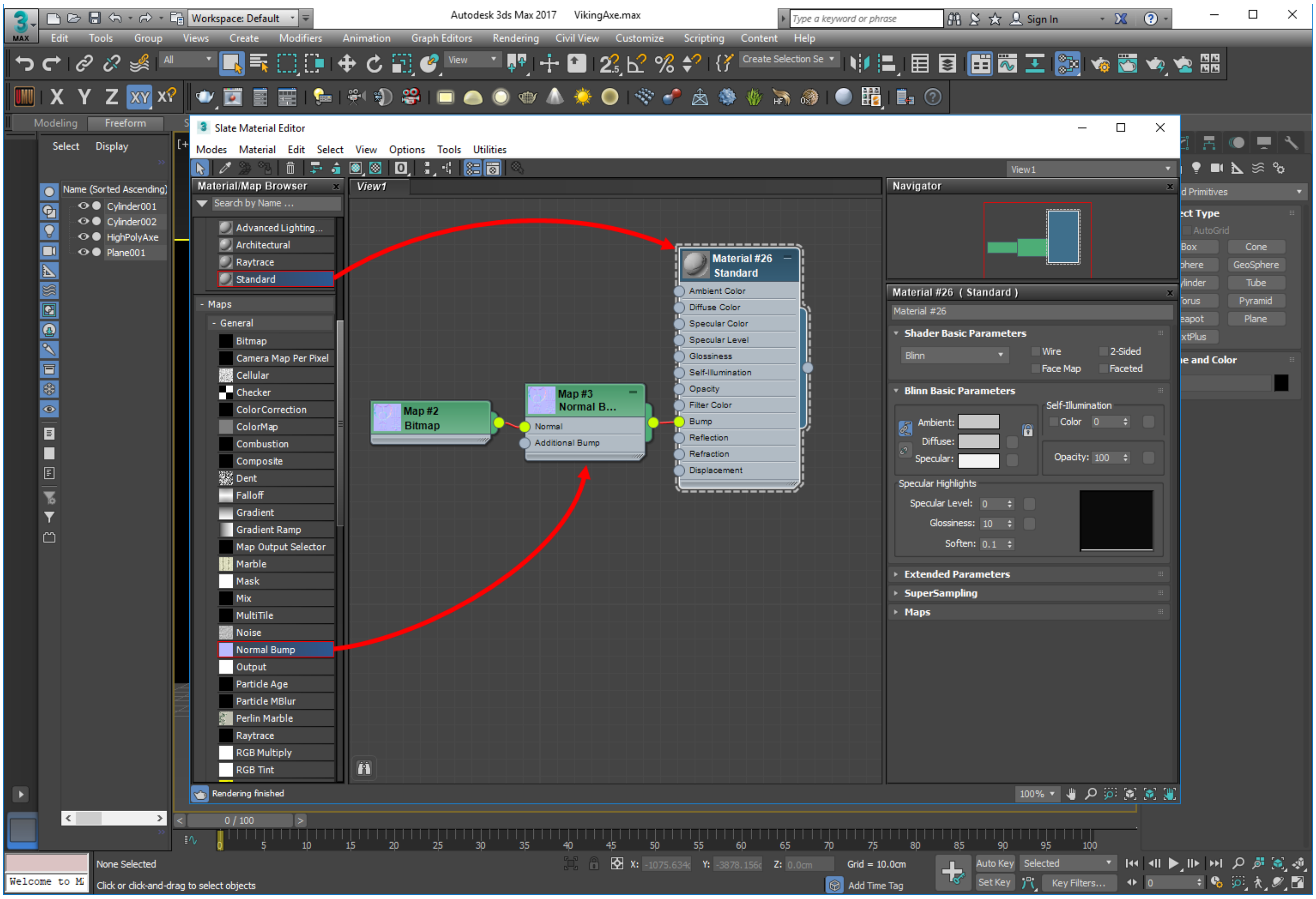
打开 Slate Material Editor



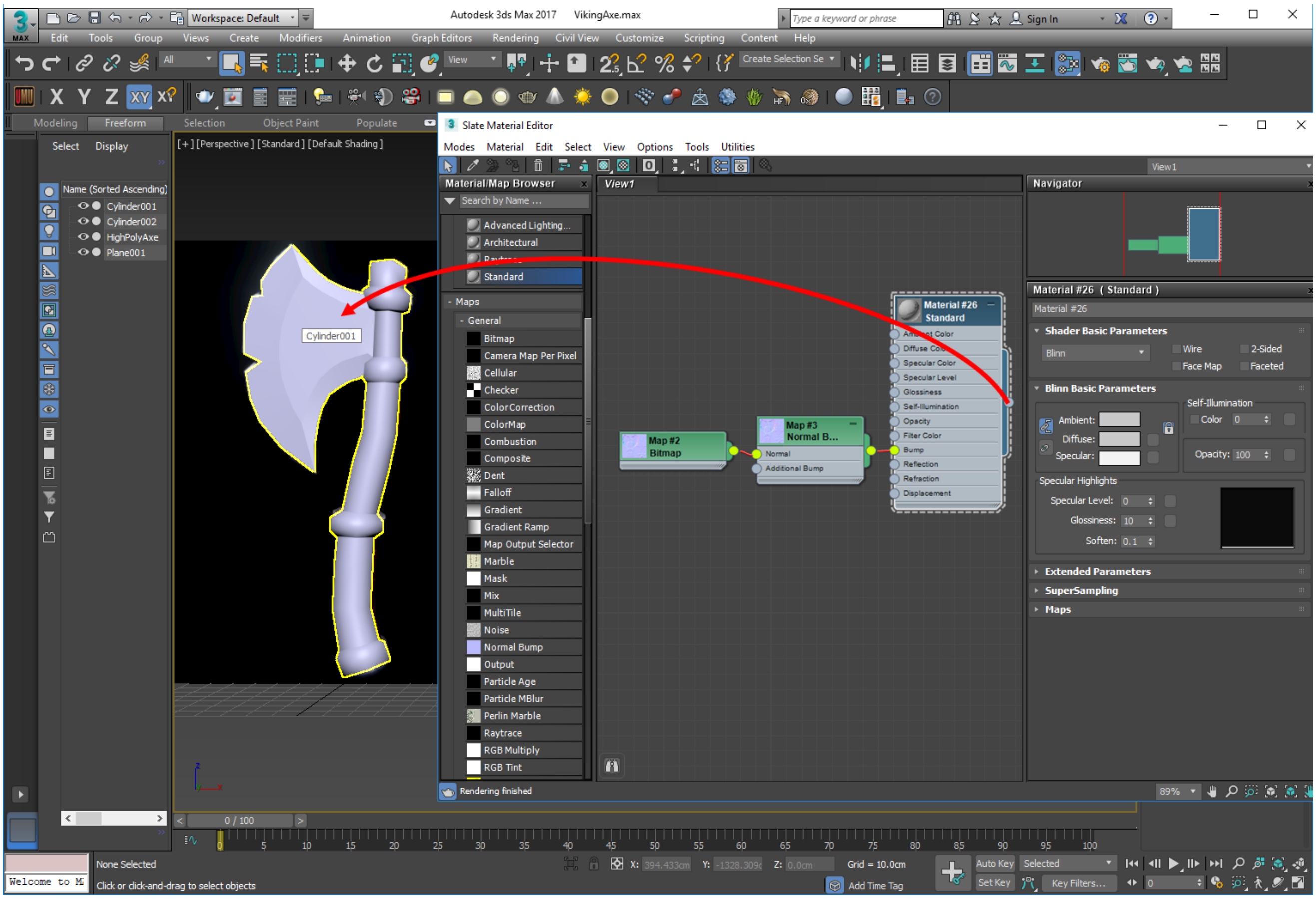
把 NormalsMap.tga 导入 Slate Material Editor



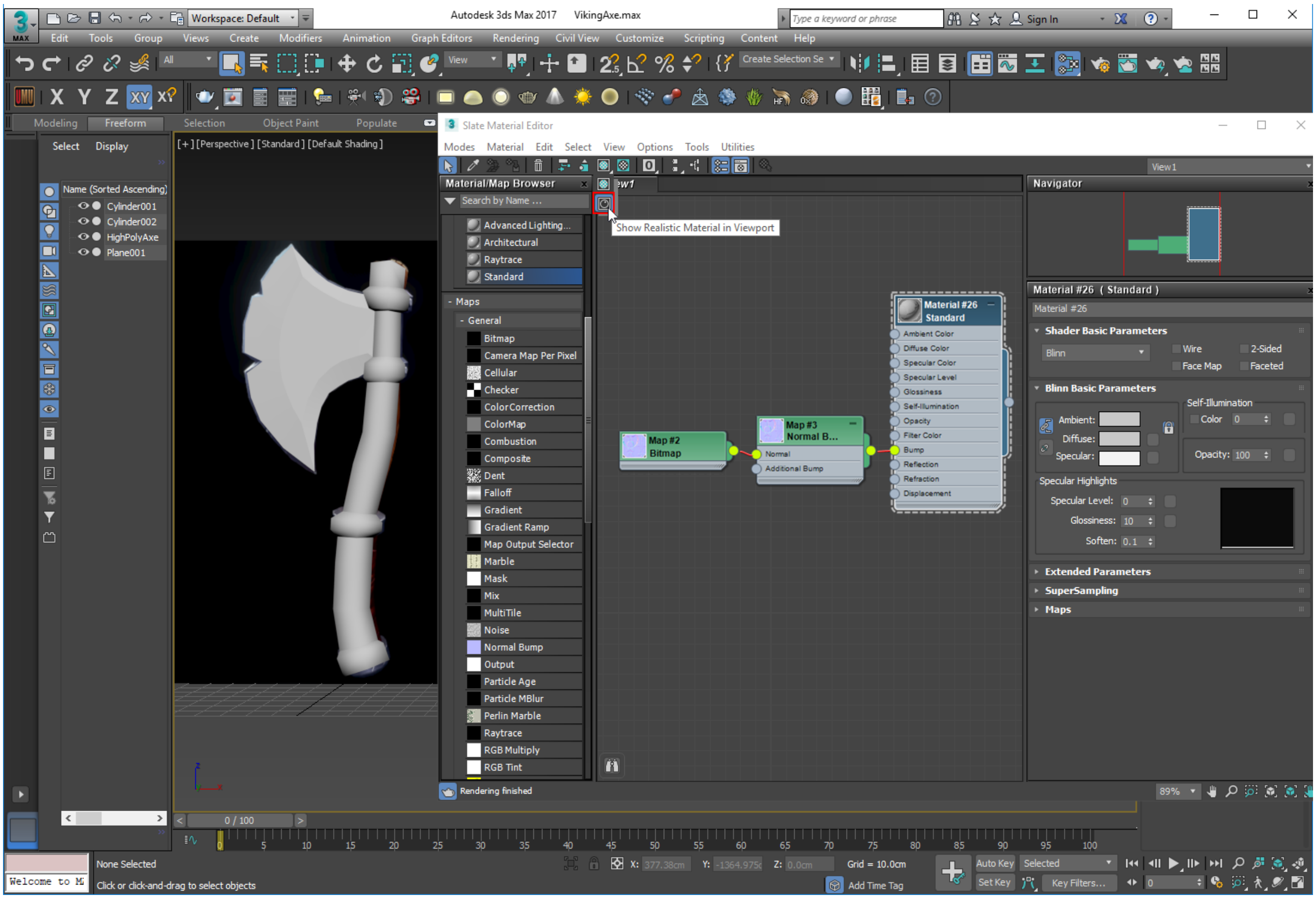
把“Standard”和“Normal Bump”拉出来



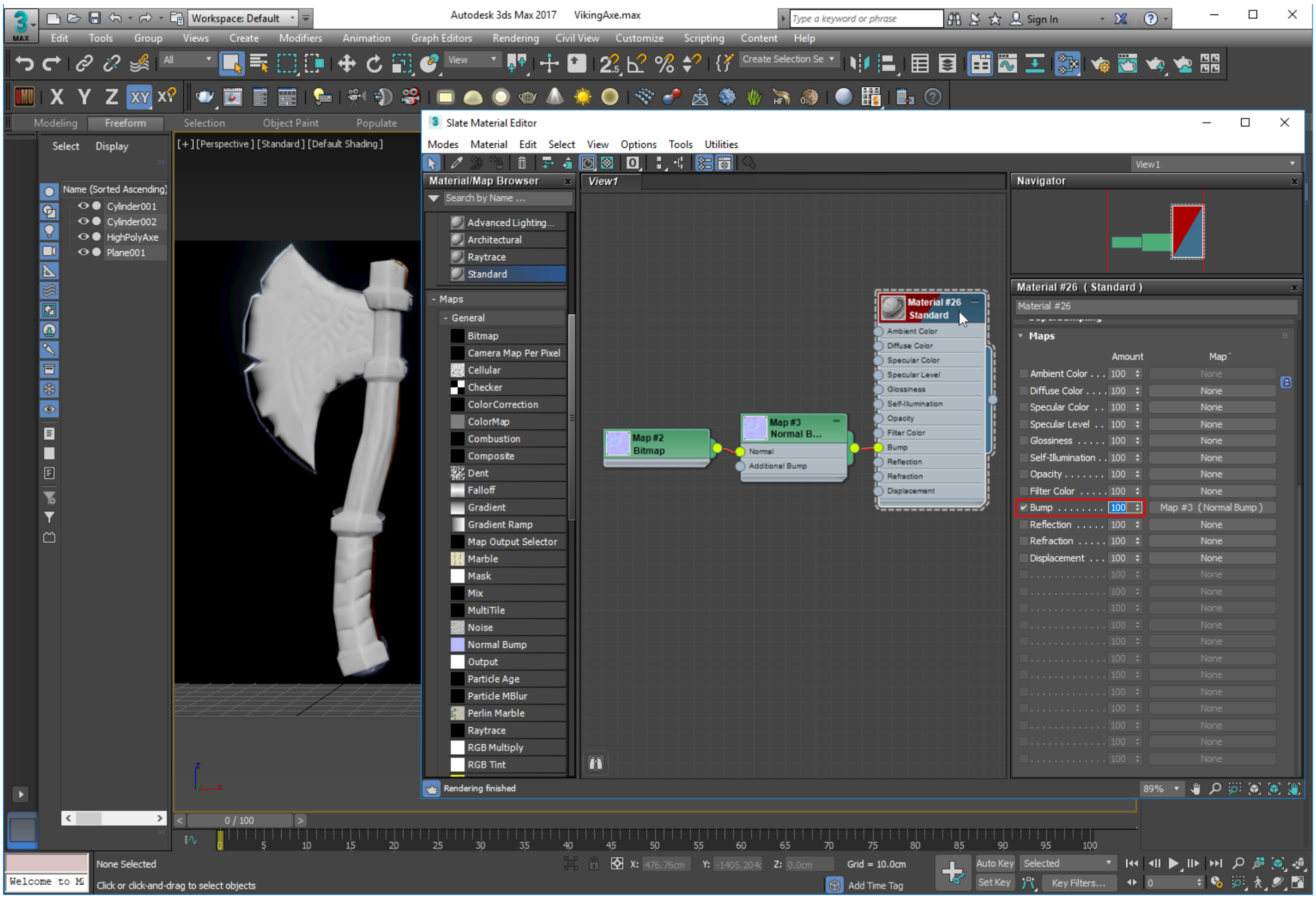
把材质球连到低模型斧头，斧头就会变成灰色



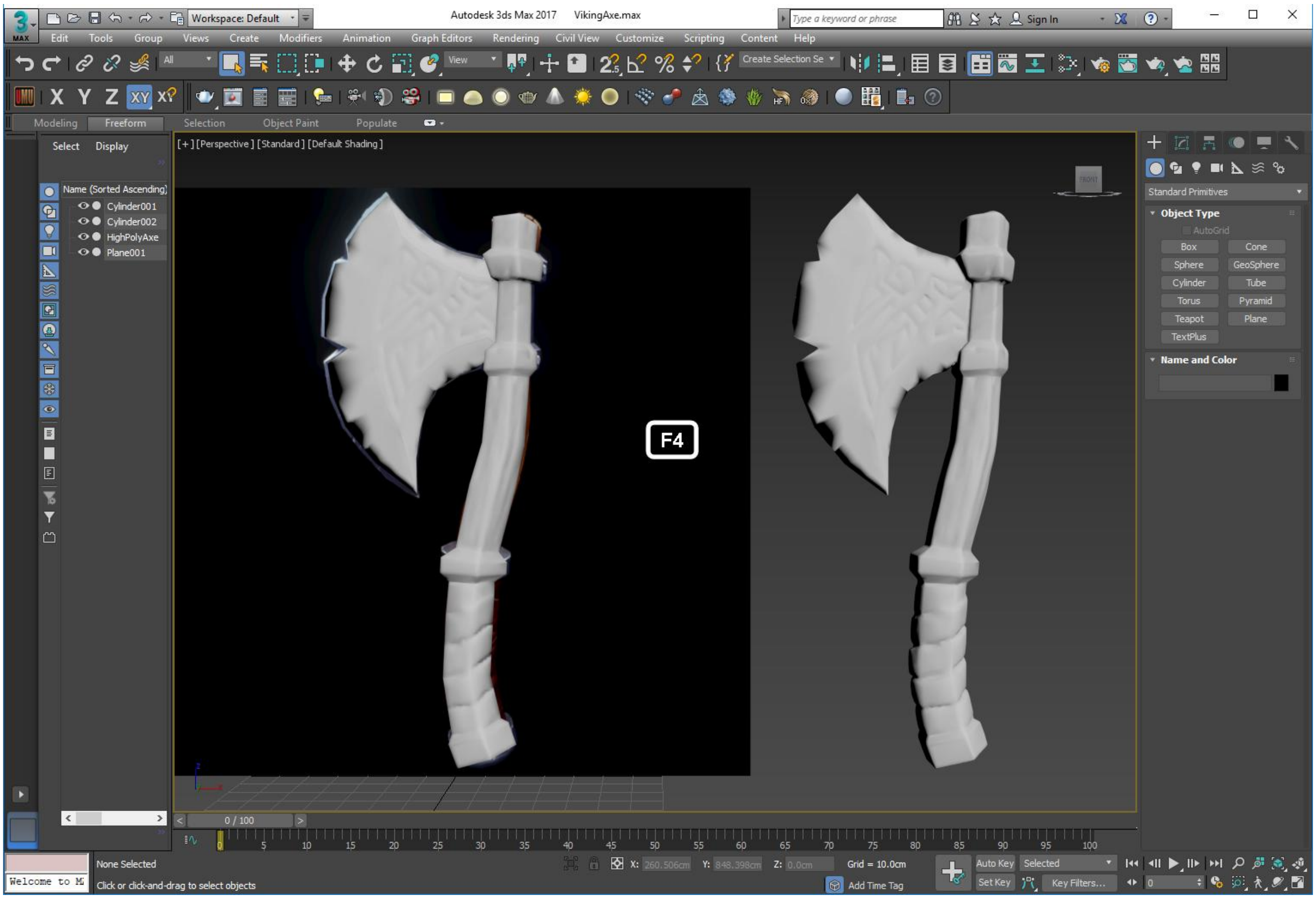
打开“Show Realistic Material in Viewport”



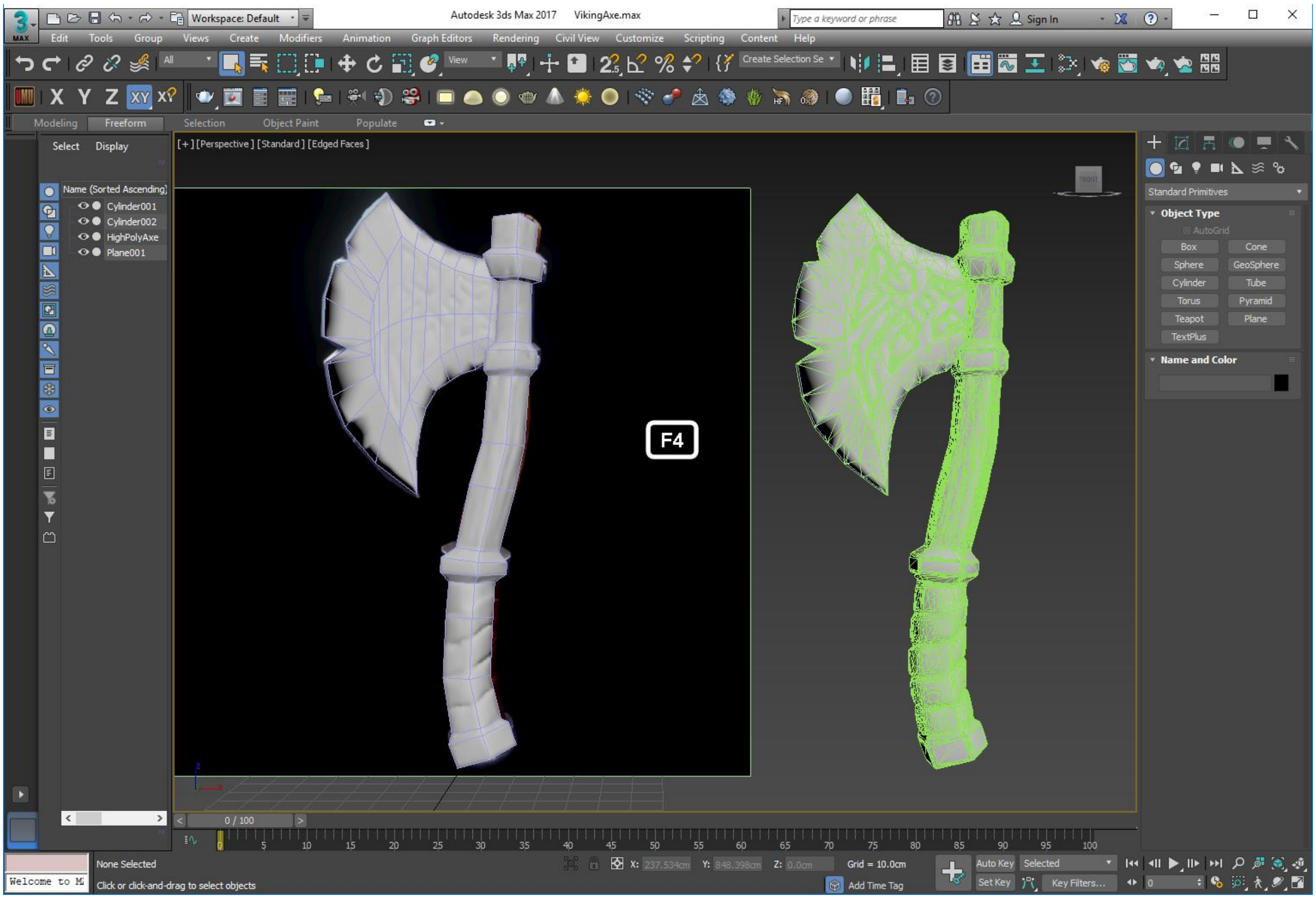
然后将 Bump 改成 30 → 100



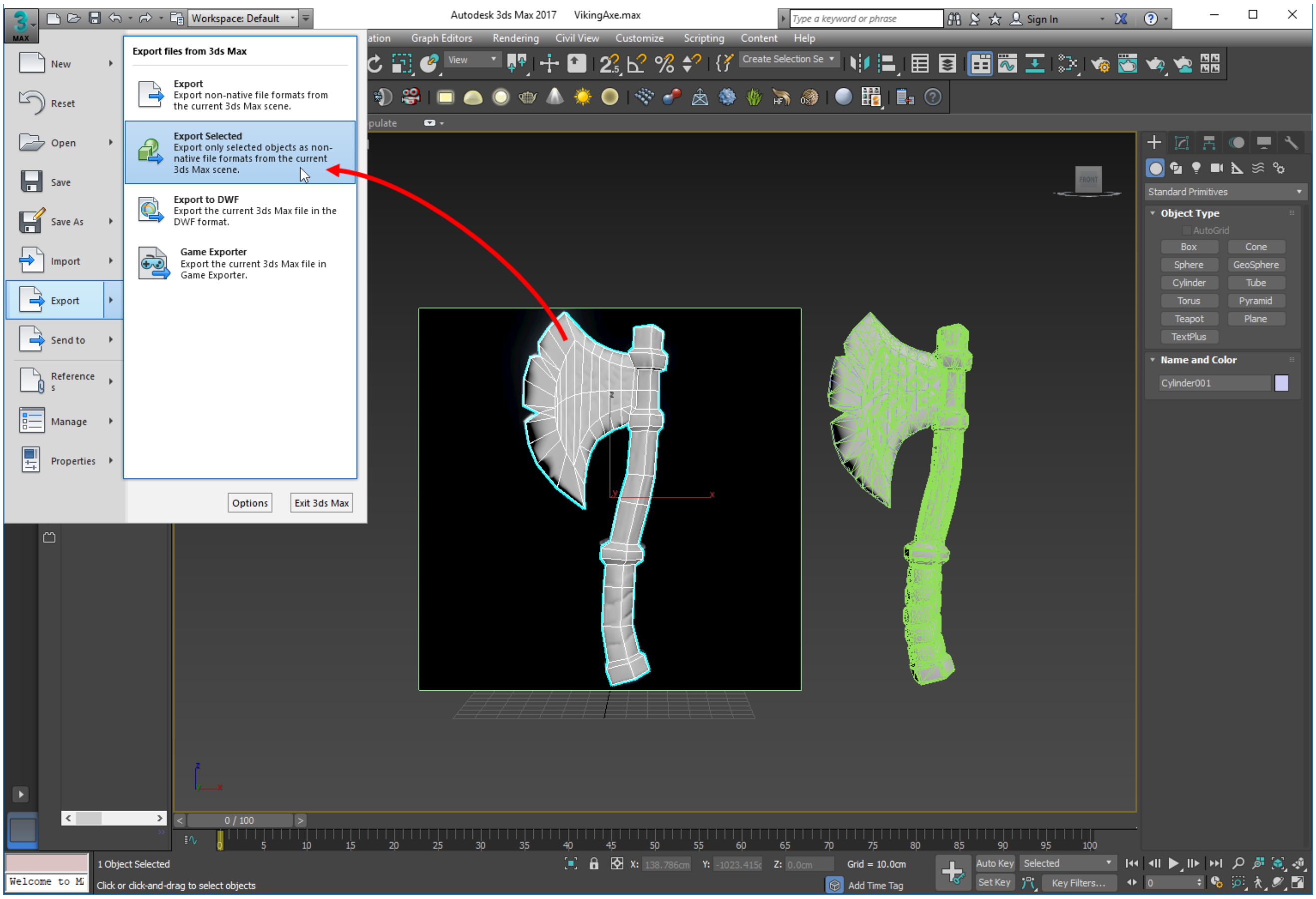
完成了，你可以按 F4 来看



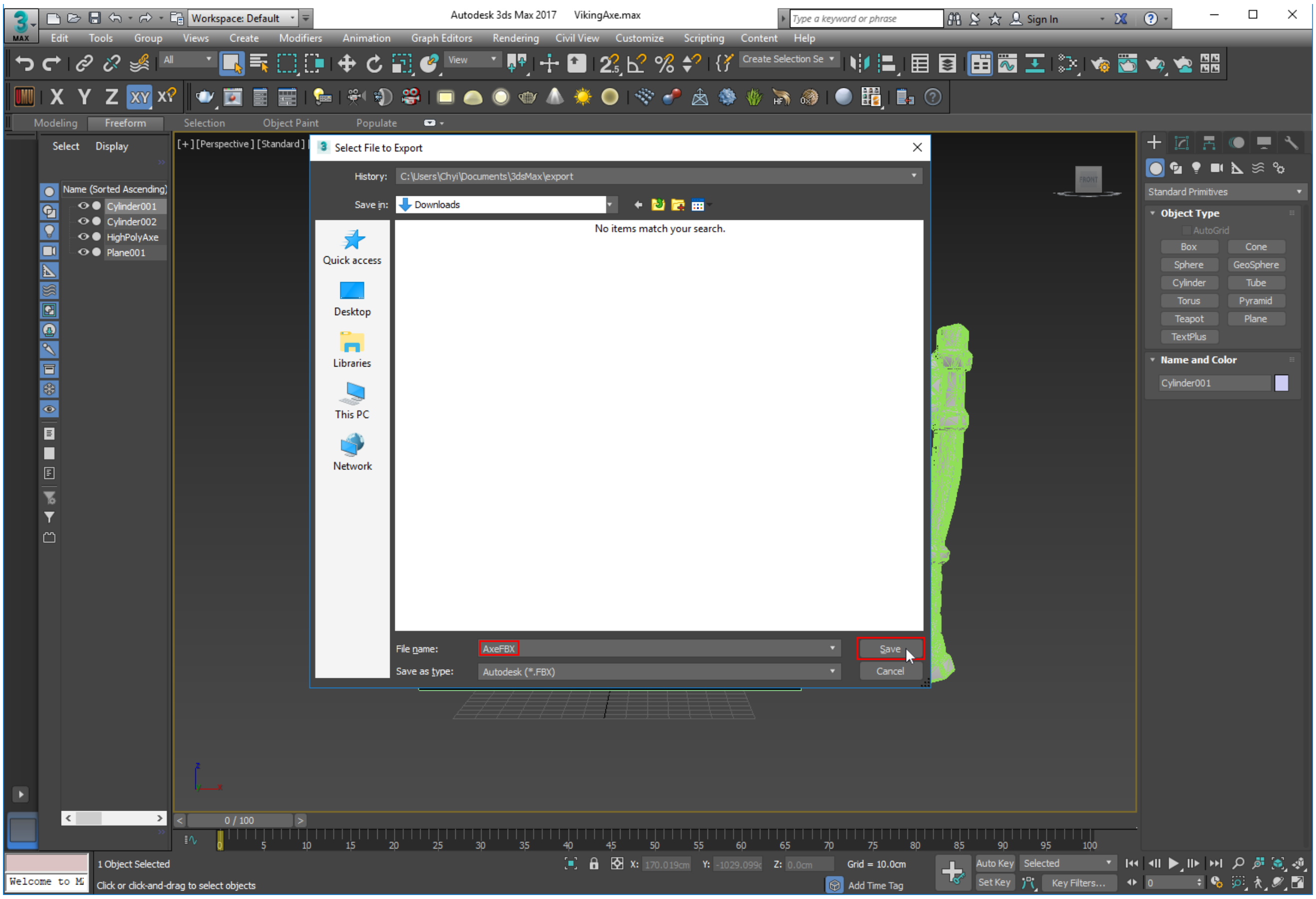
按下 F4，就可以看到左边的是低模型斧头 (一点点的线)，右边的是高模型斧头 (很多的线)



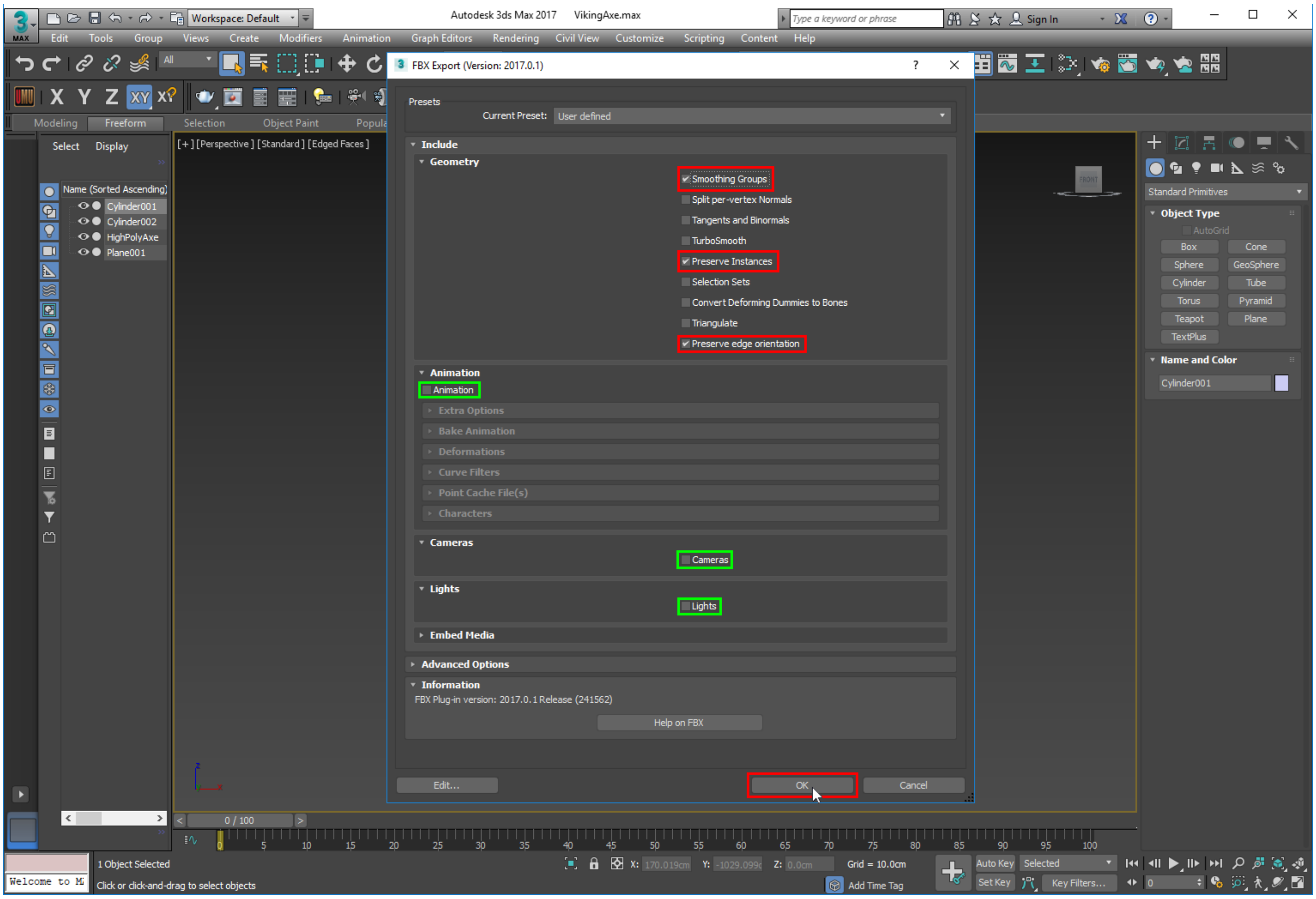
选择低模型斧头，然后按 Export Selected



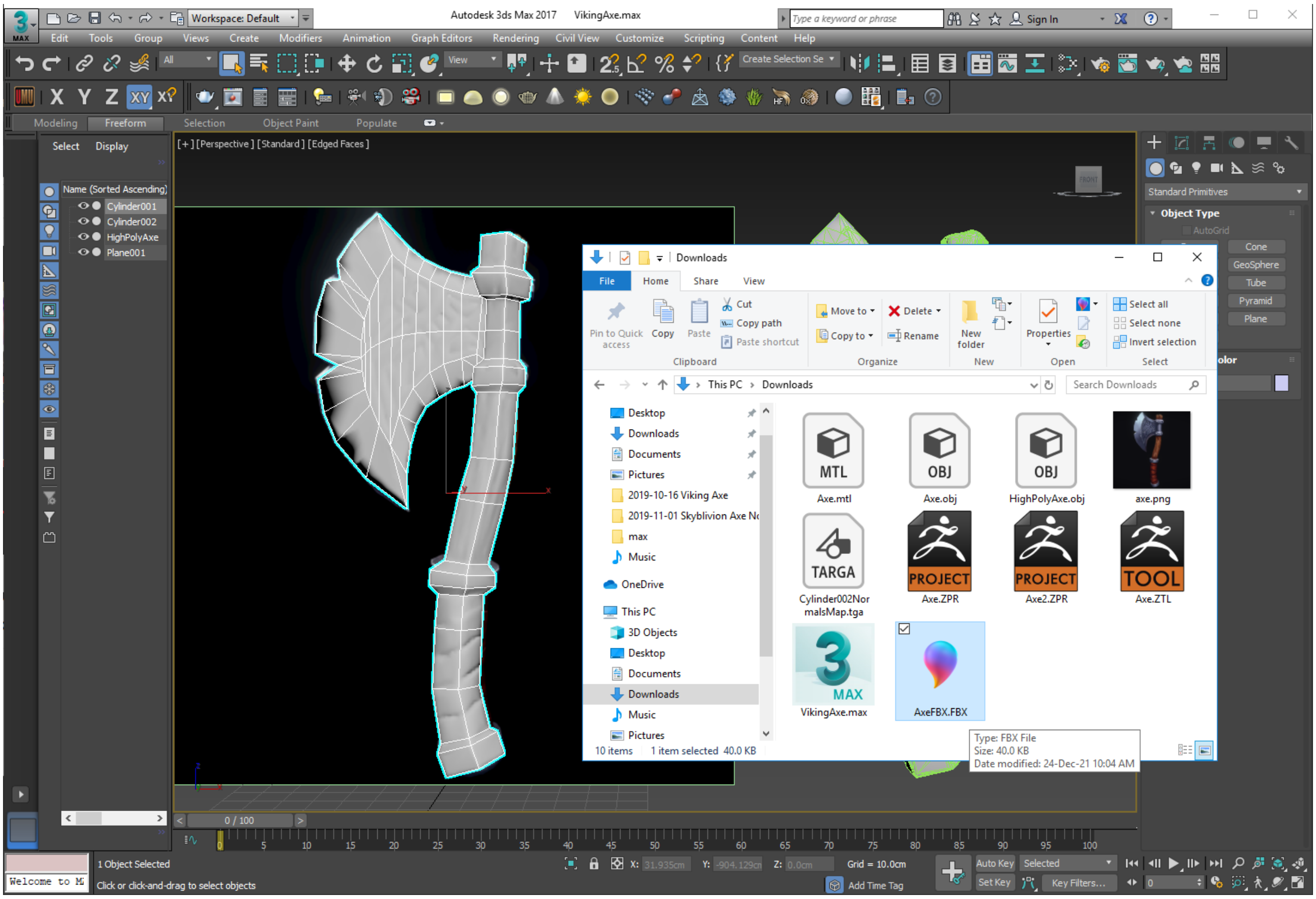
Export 成 FBX



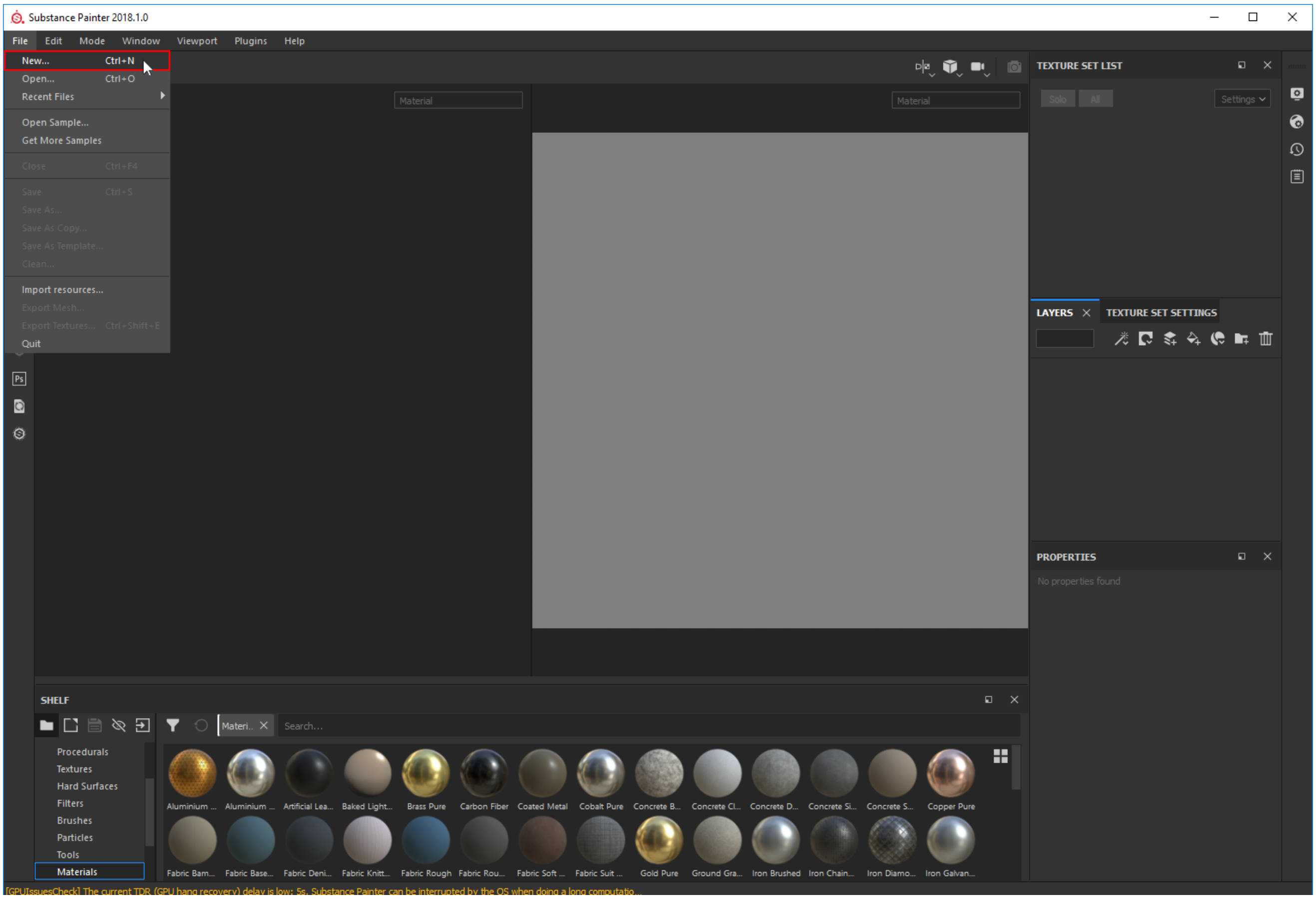
打勾 Smoothing Group, Preserve Instances 和 Preserve edge orientation
还有取消 Animation, Cameras and Lights



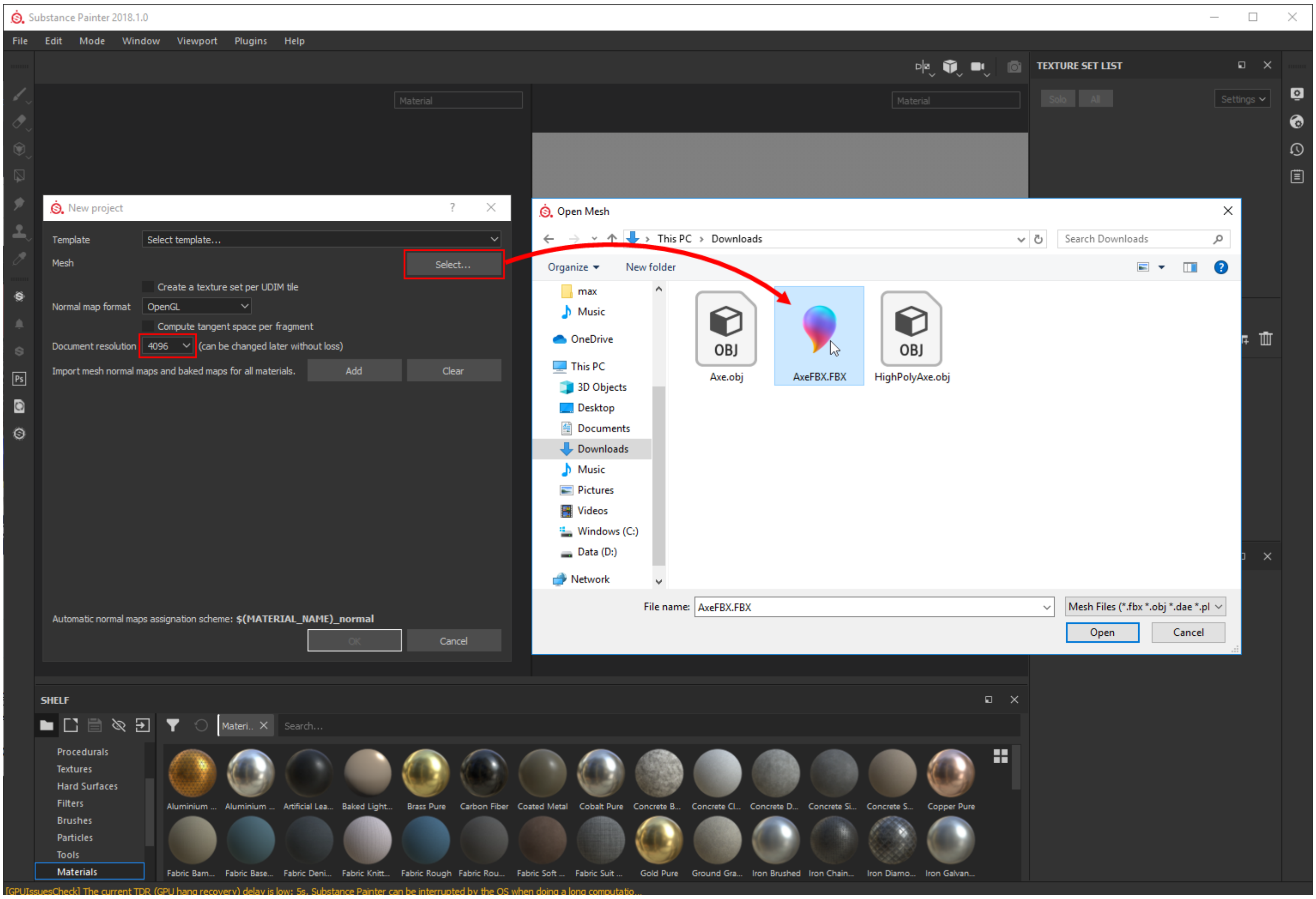
检查导出的文件夹，就可以看到 FBX 文件



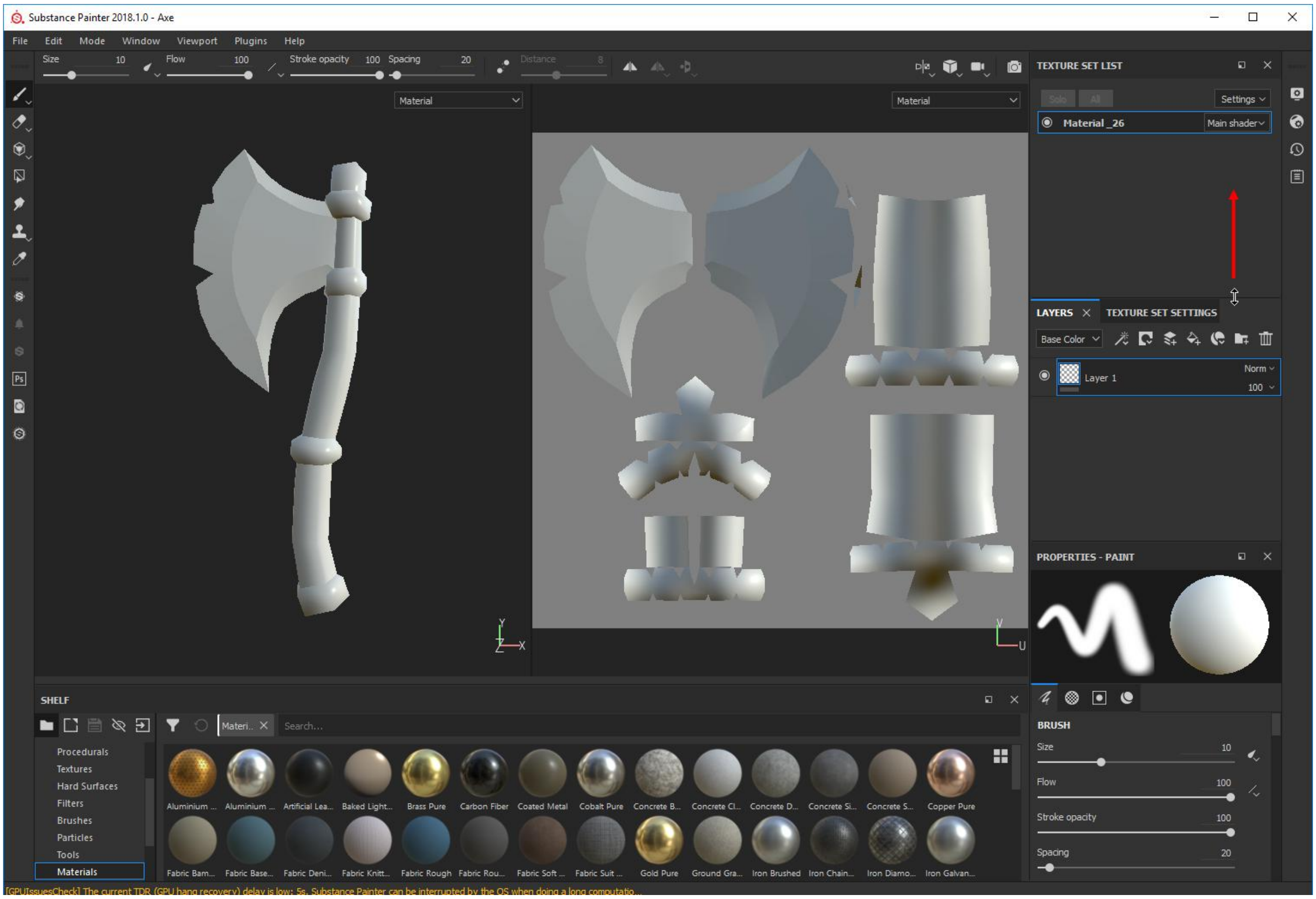
打开 Substance Painter，按下“New...”



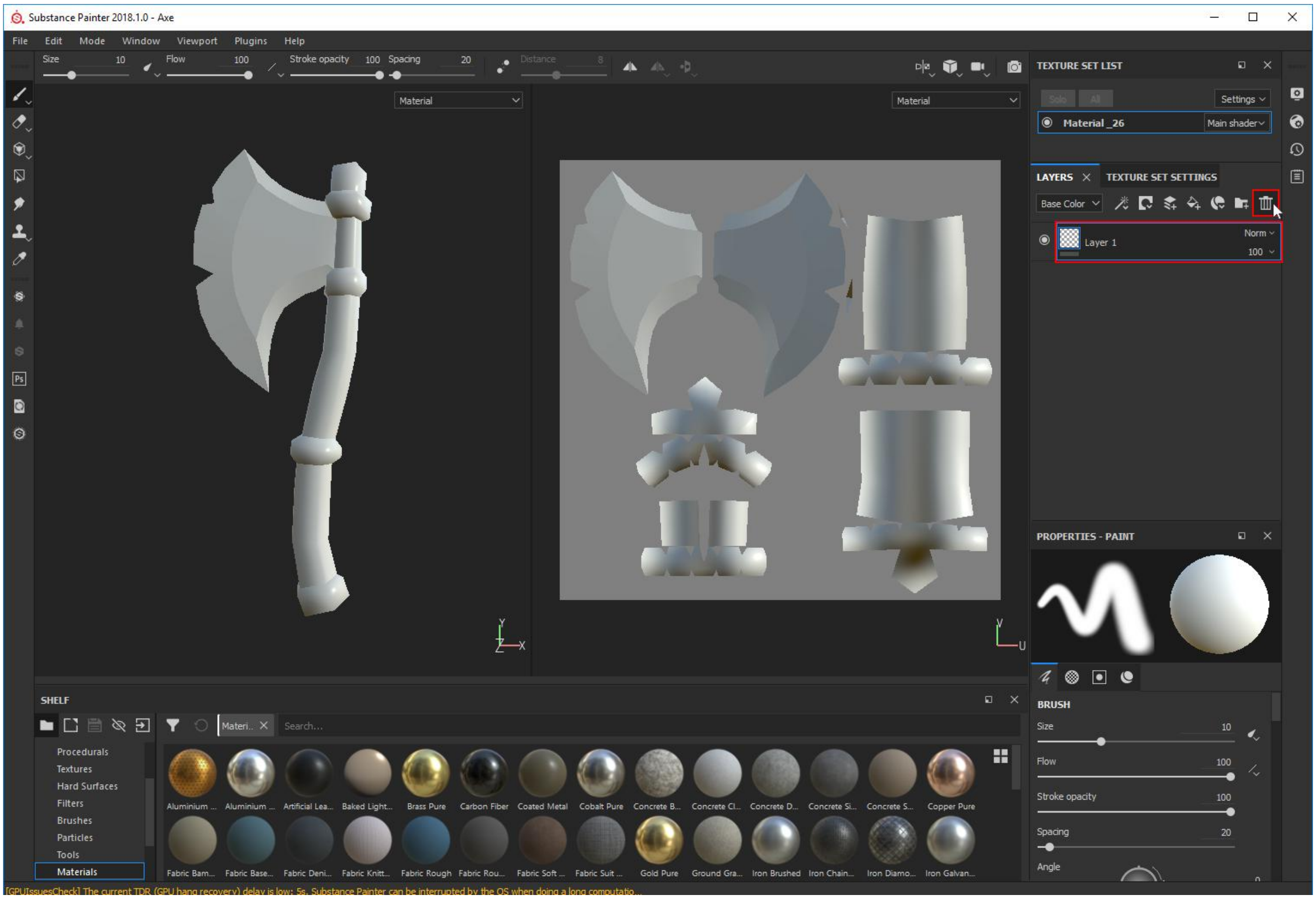
按 Select 选择 FBX，然后 Document resolution: 4096



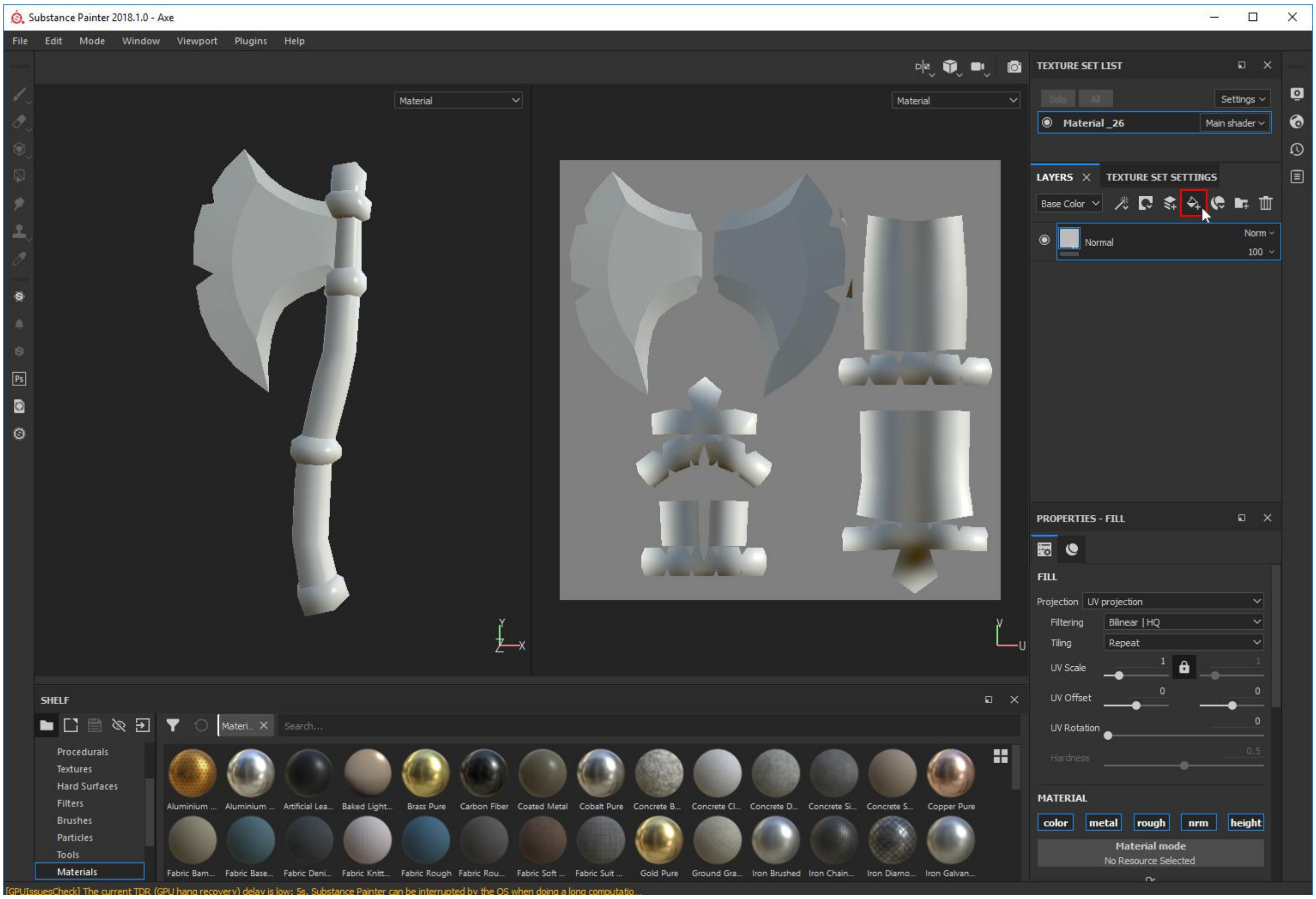
现在这里可以看到你的低模型斧头



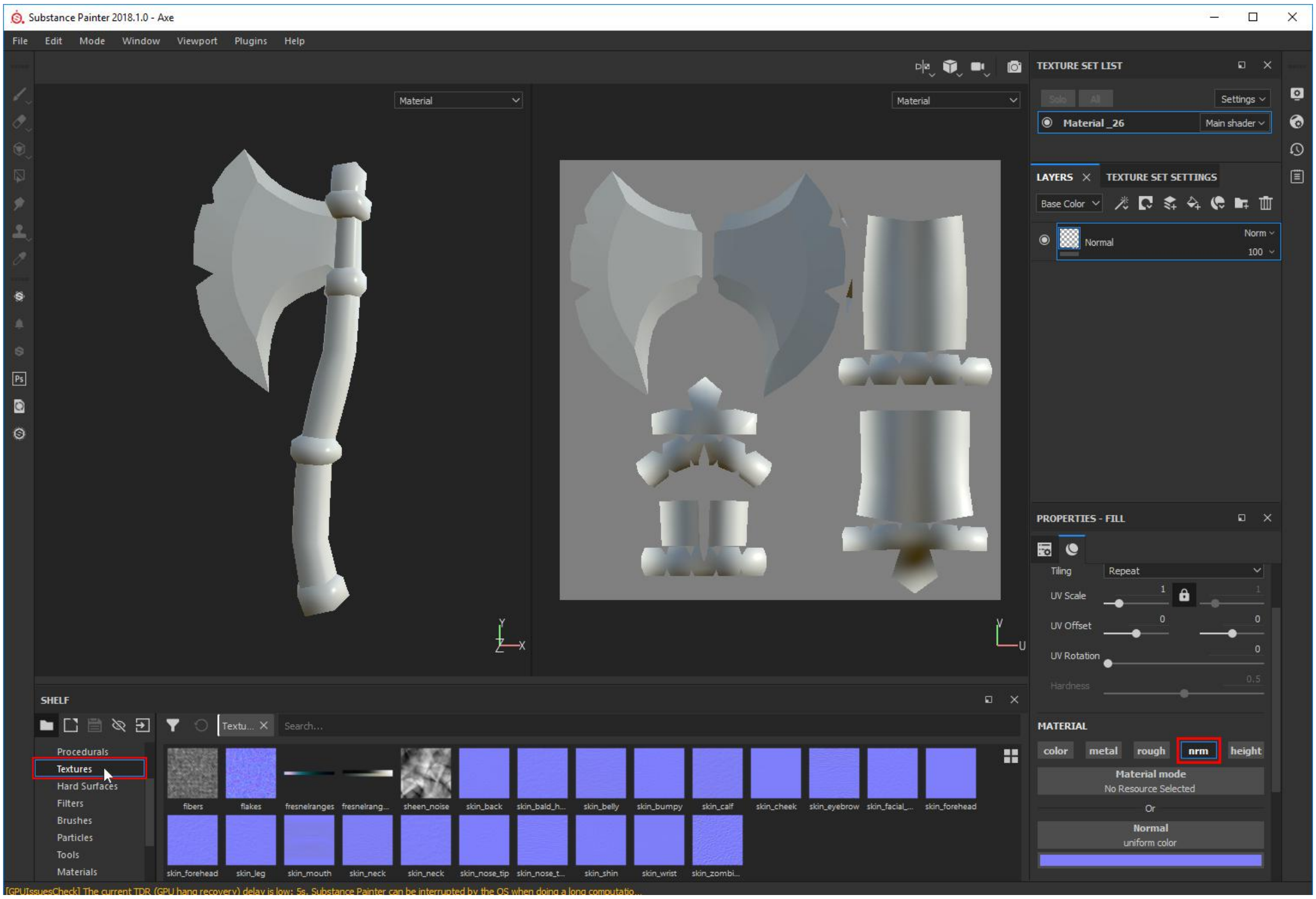
删除 Layer 1，因为我们不需要用它



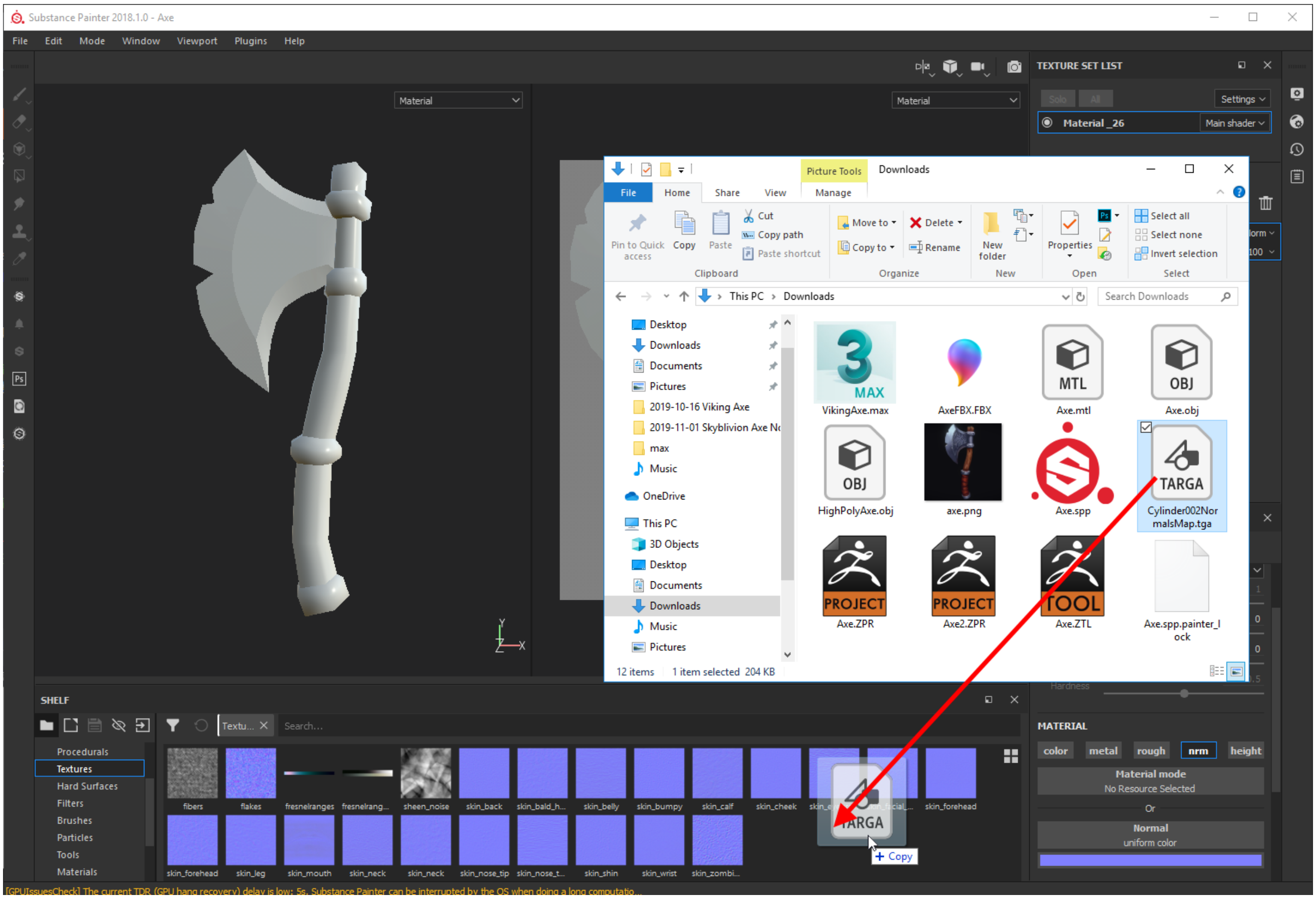
按下“Add Fill Layer”，然后取名为 Normal



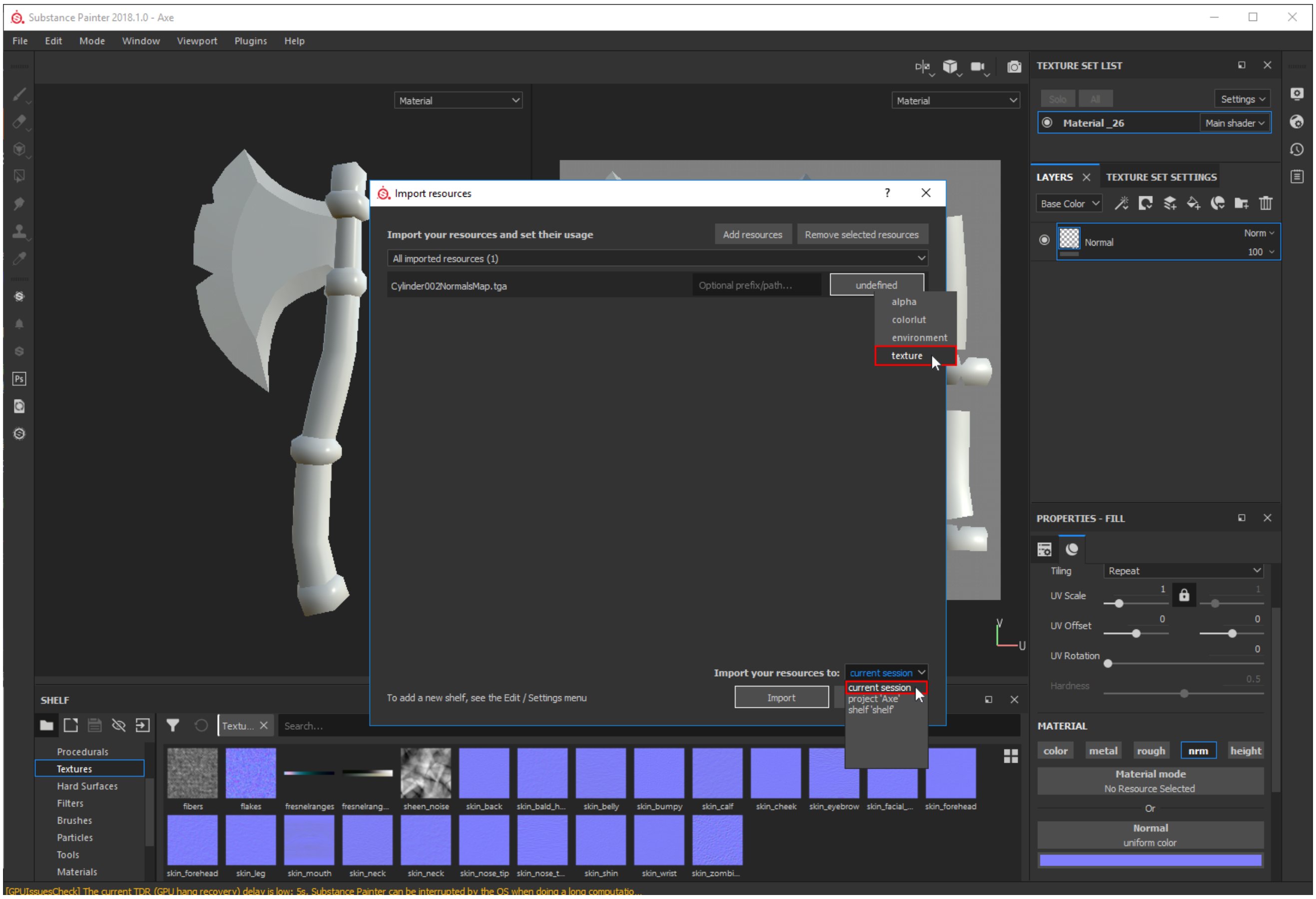
在 properties 下面，取消所有的，只有开 nrm (normal)



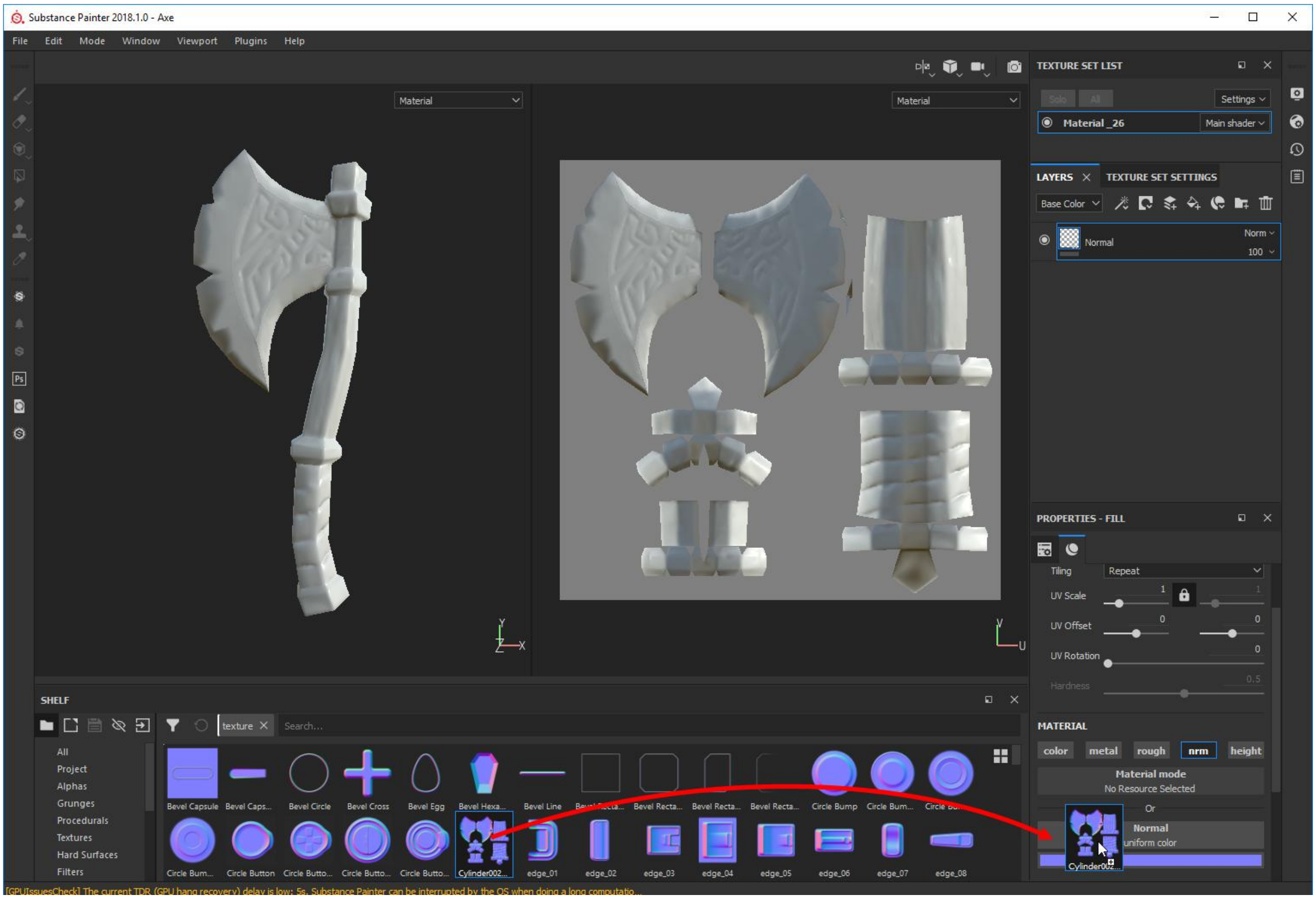
在左边按 Textures，然后导入 NormalsMap.tga



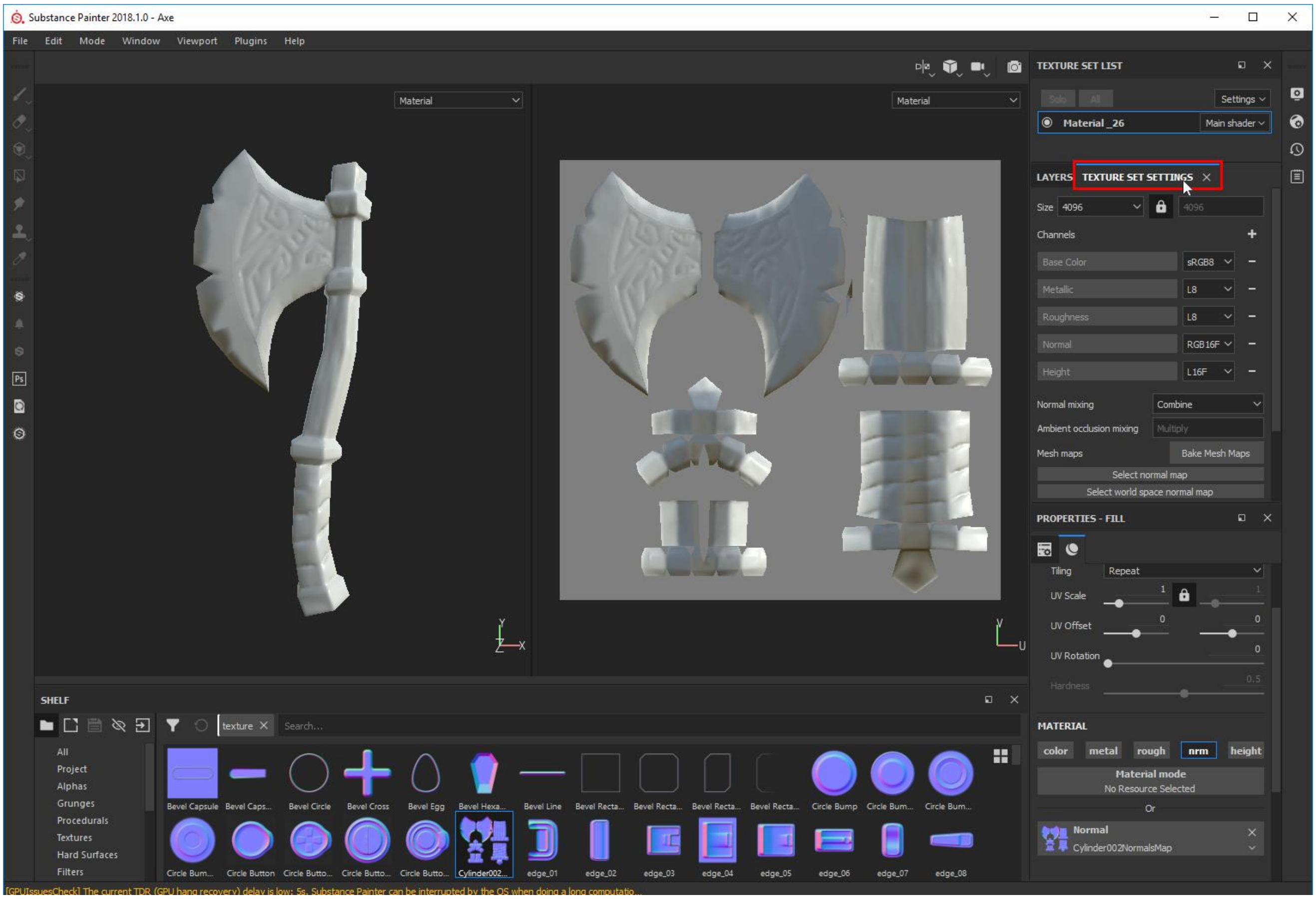
导入之后，选 texture 和 current session



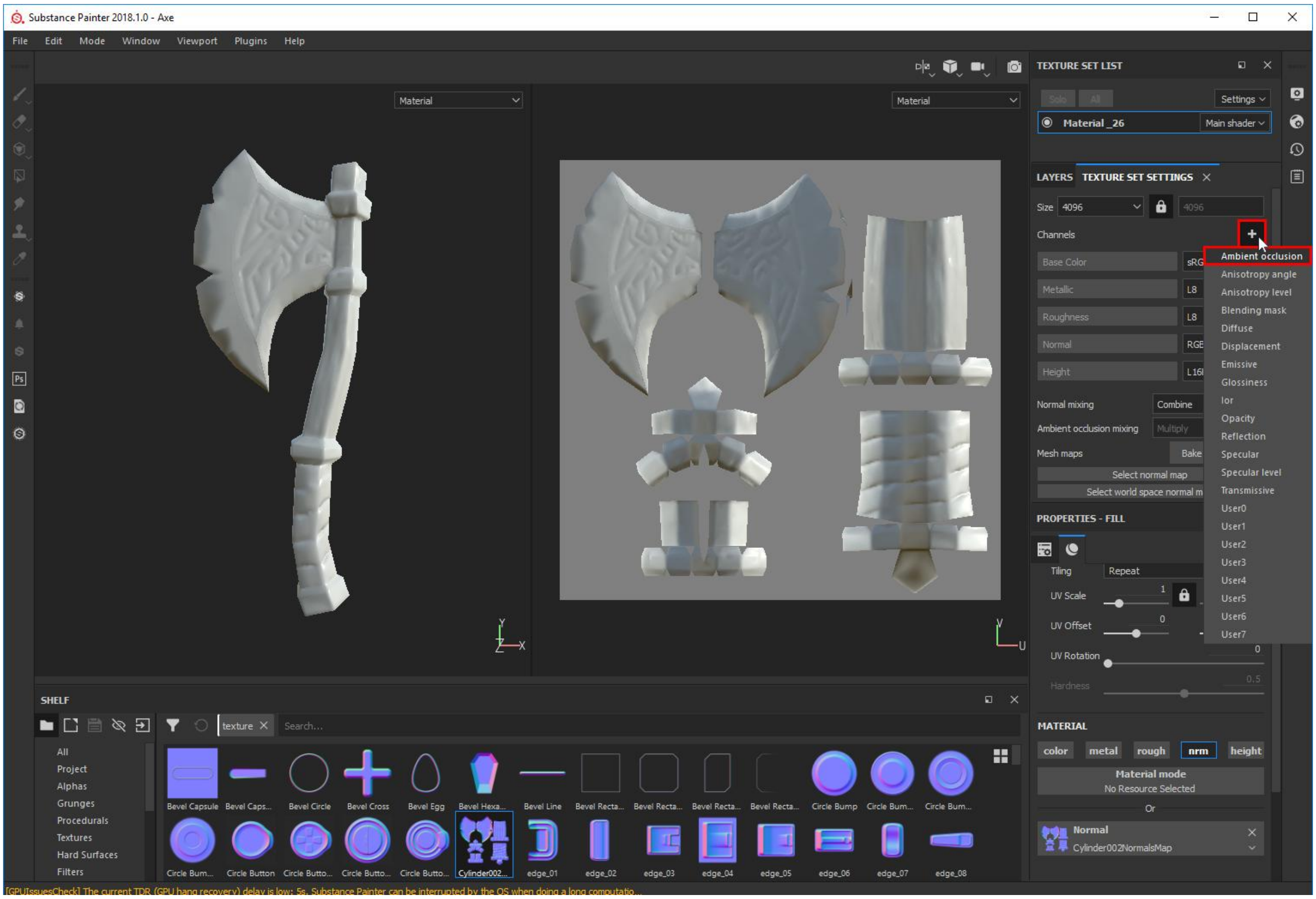
把 NormalsMap.tga 拉到 Normal



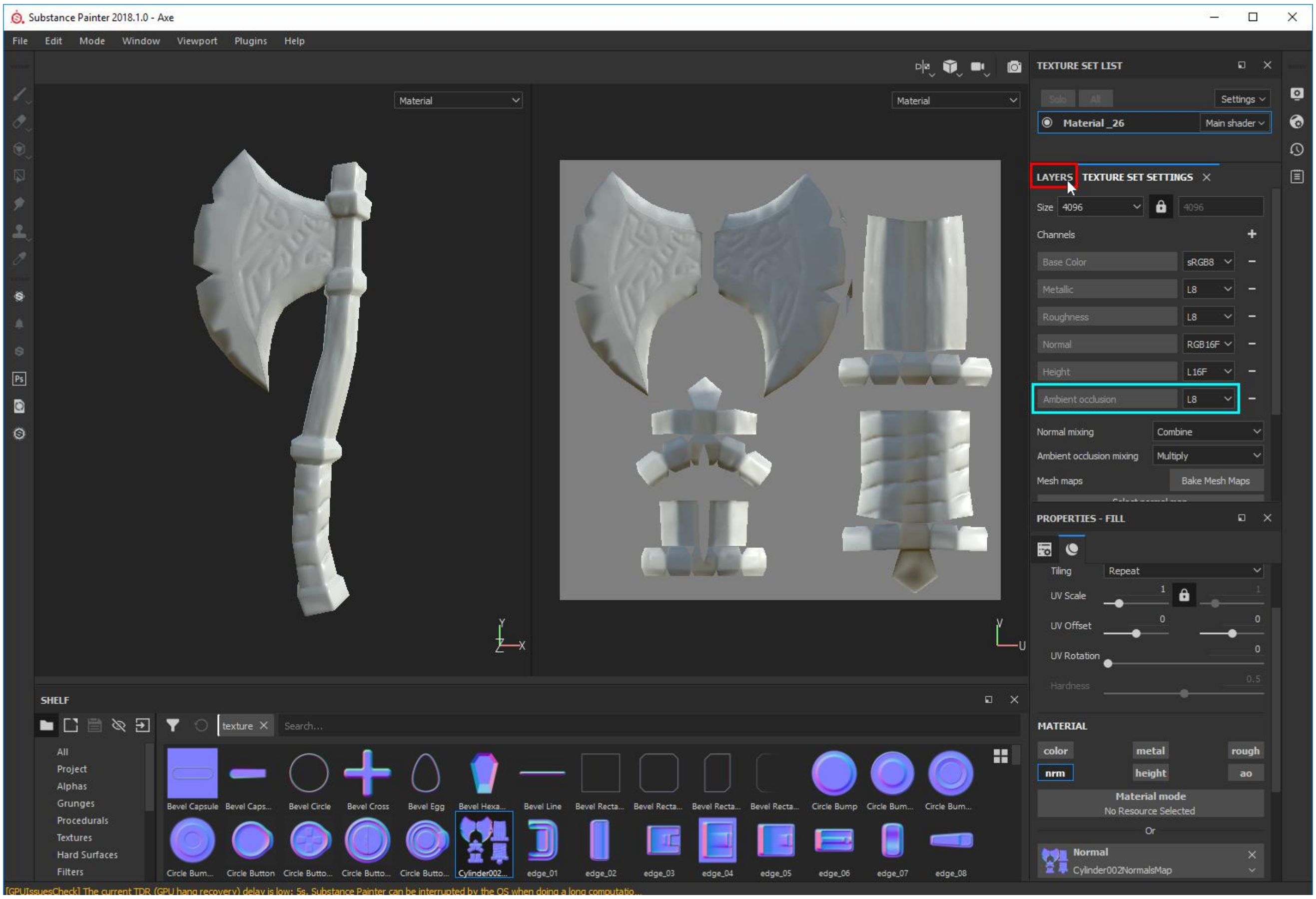
按下 Texture Set Settings



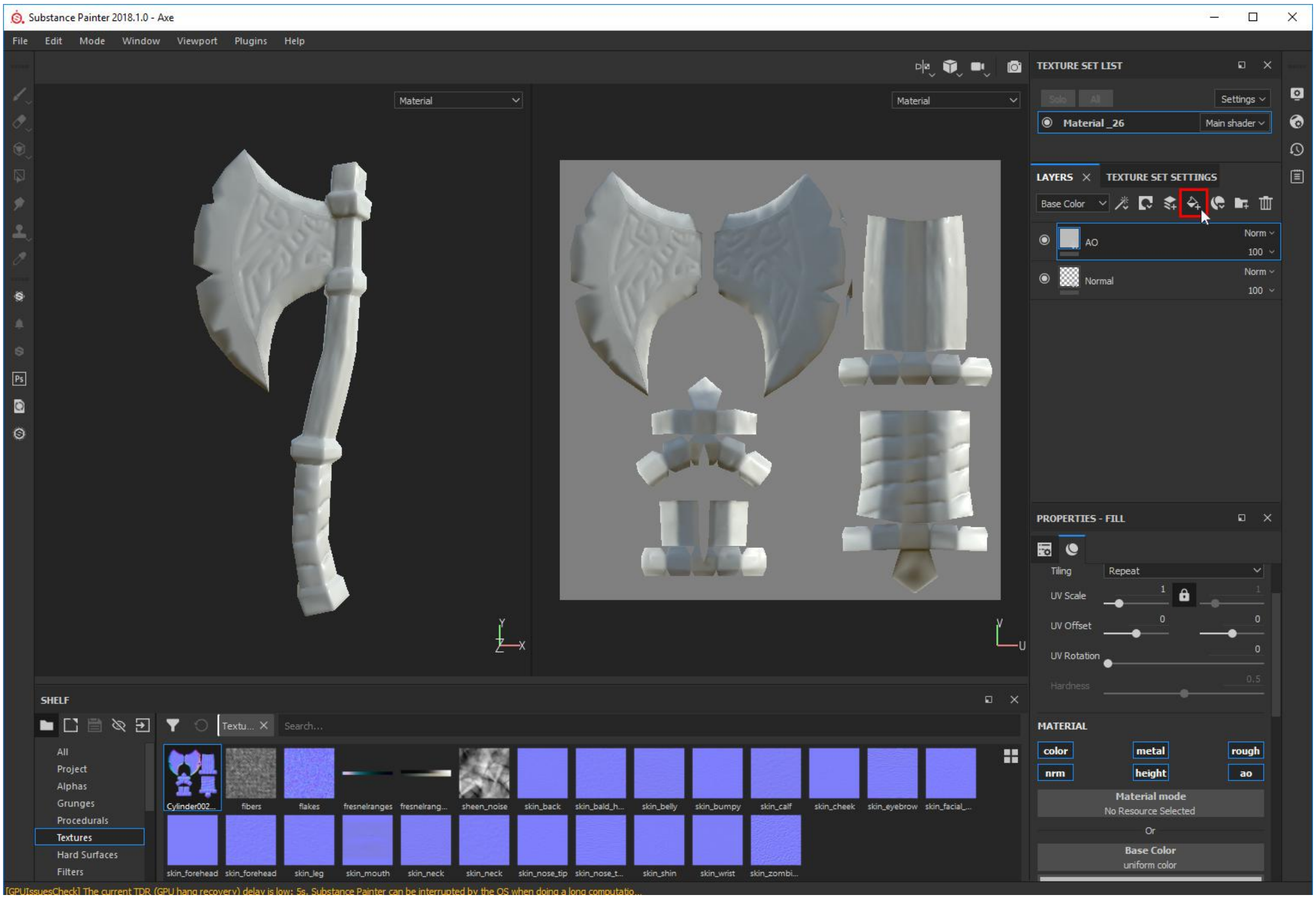
之后按“+”然后选择 Ambient occlusion



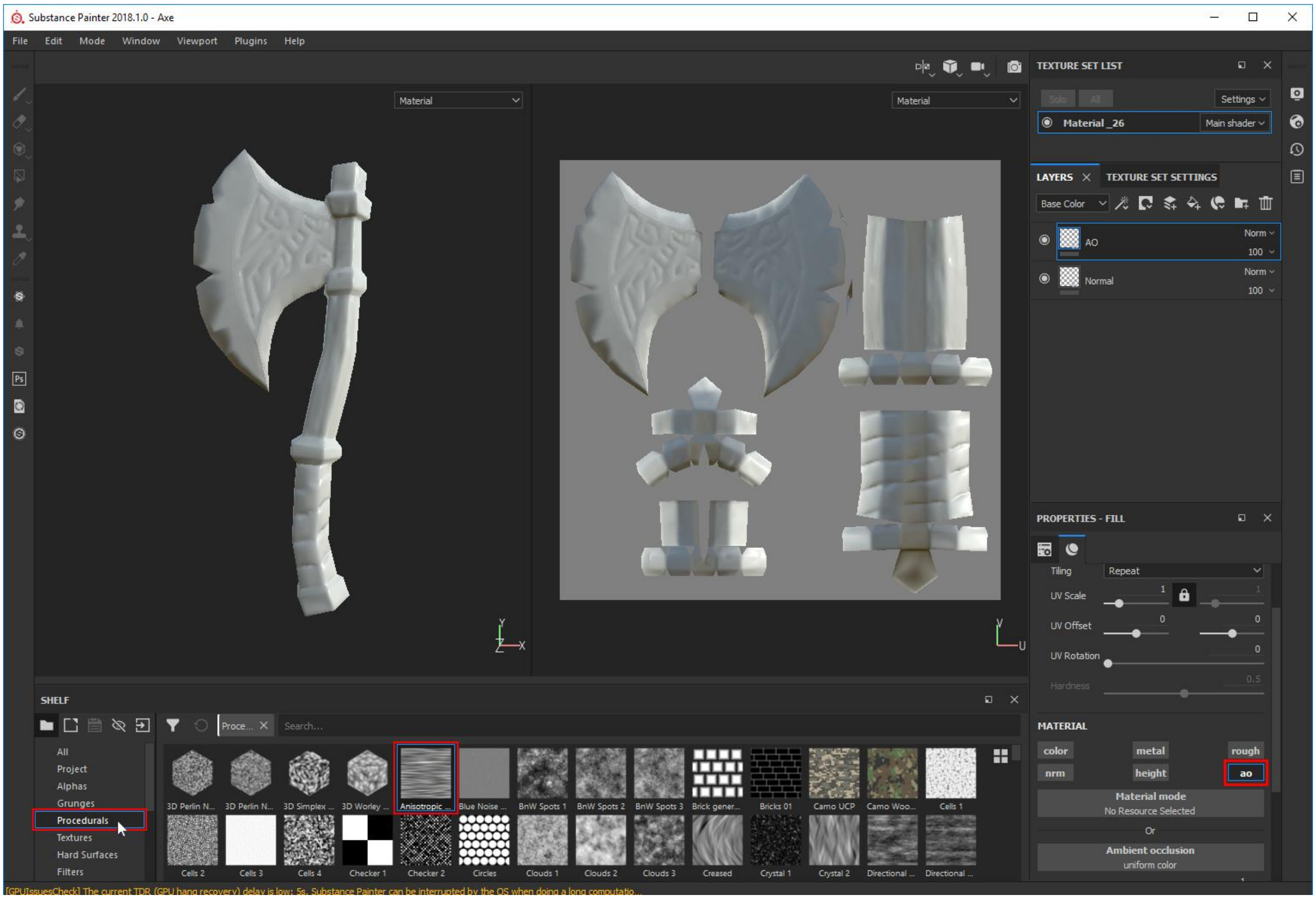
之后你可以看到 Ambient occlusion，就可以切换到 Layers 了



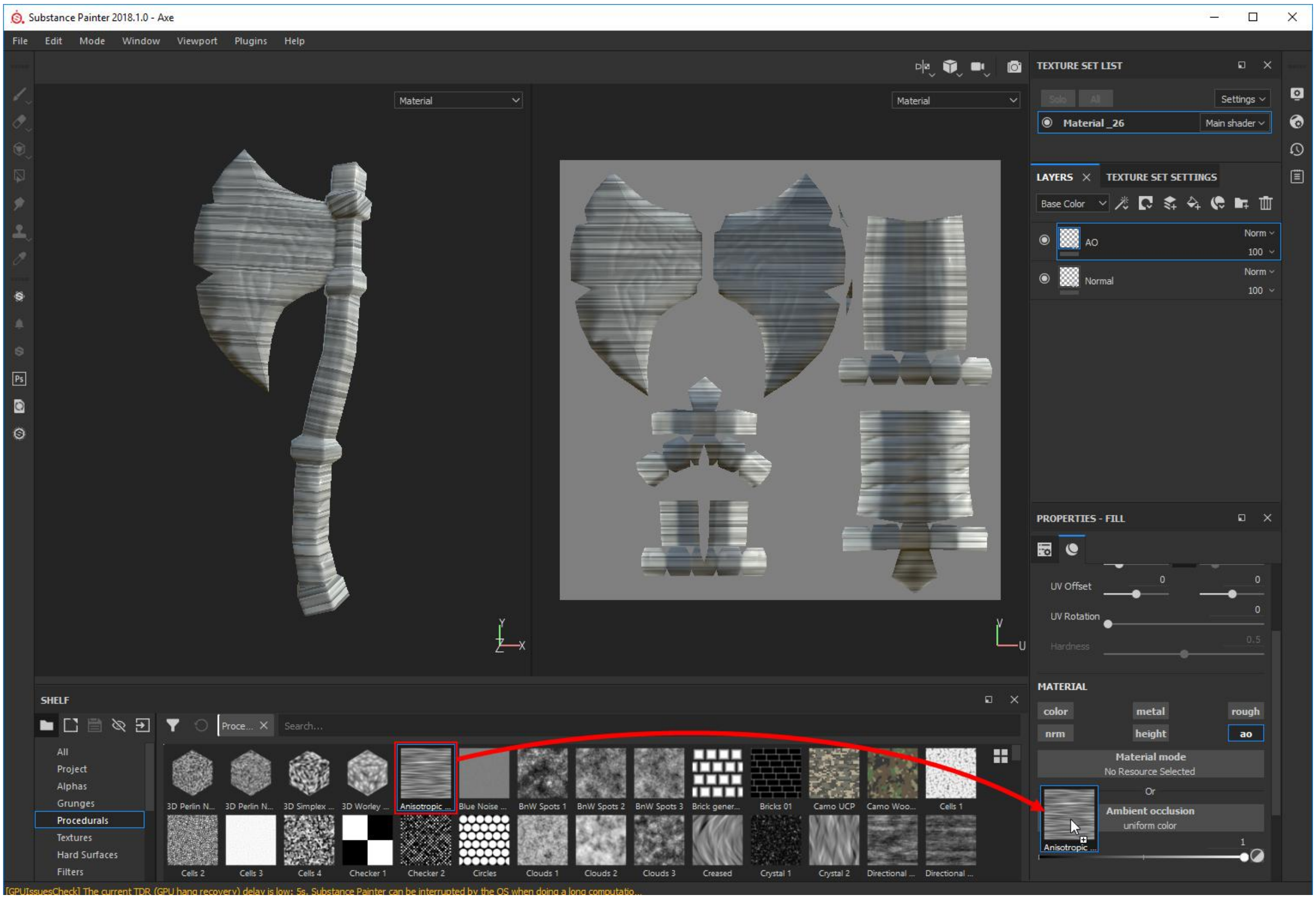
按下 Add Fill Layer 然后取名为 AO (ambient occlusion)



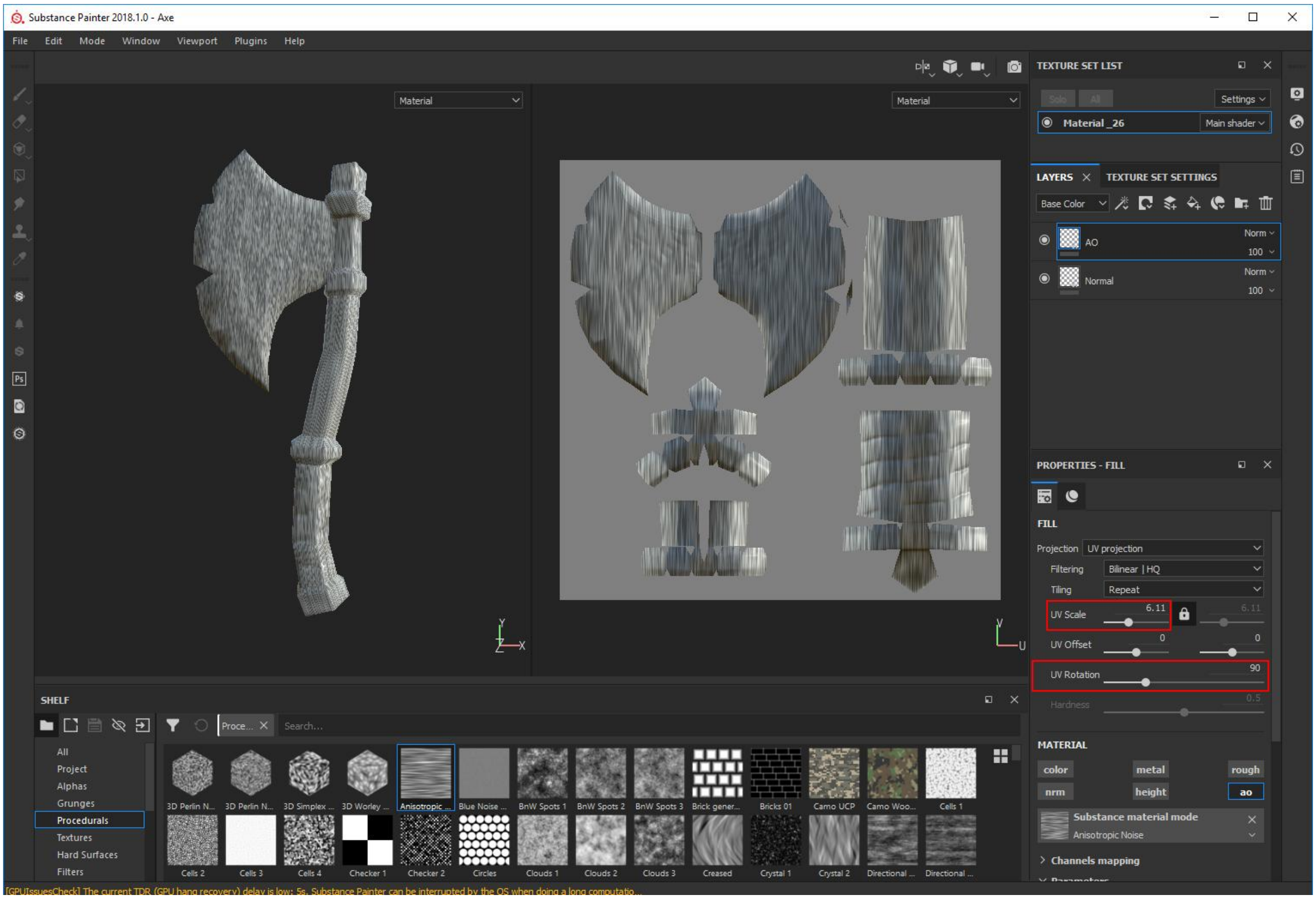
取消所有的，只有打开 ao



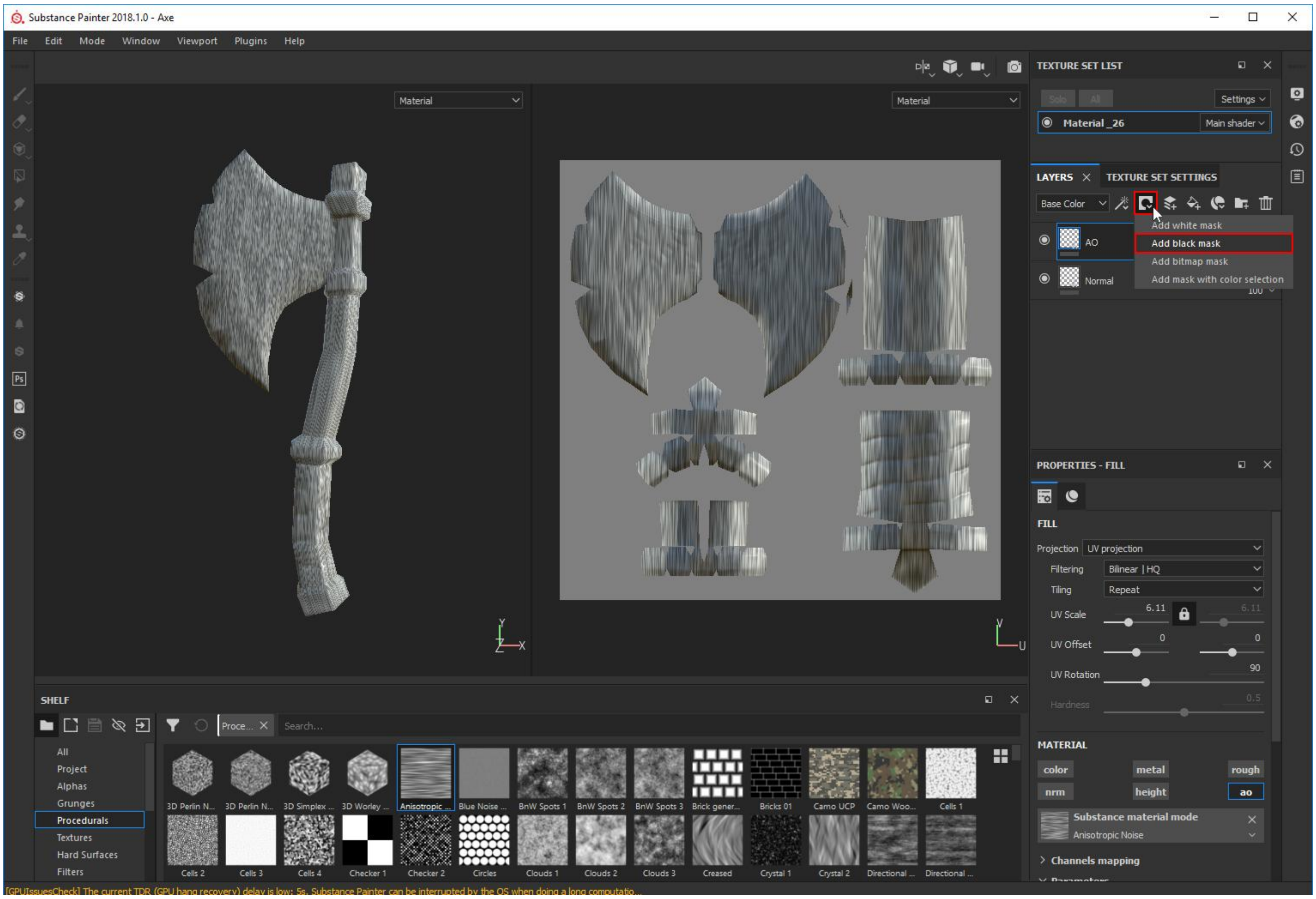
Procedurals → Anisotropic → Ambient occlusion (用在金属部分)



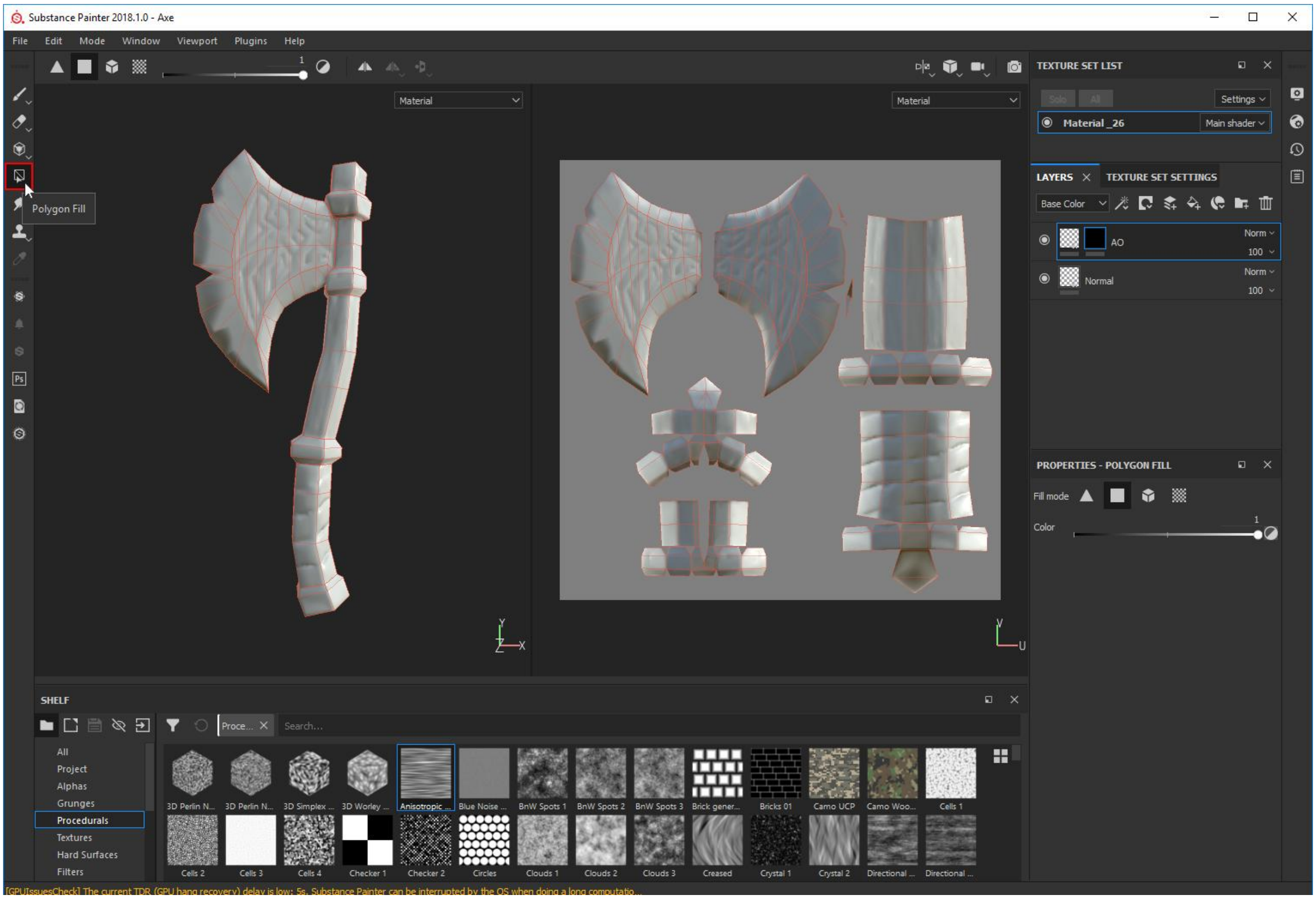
调整 UV Scale 和 UV Rotation



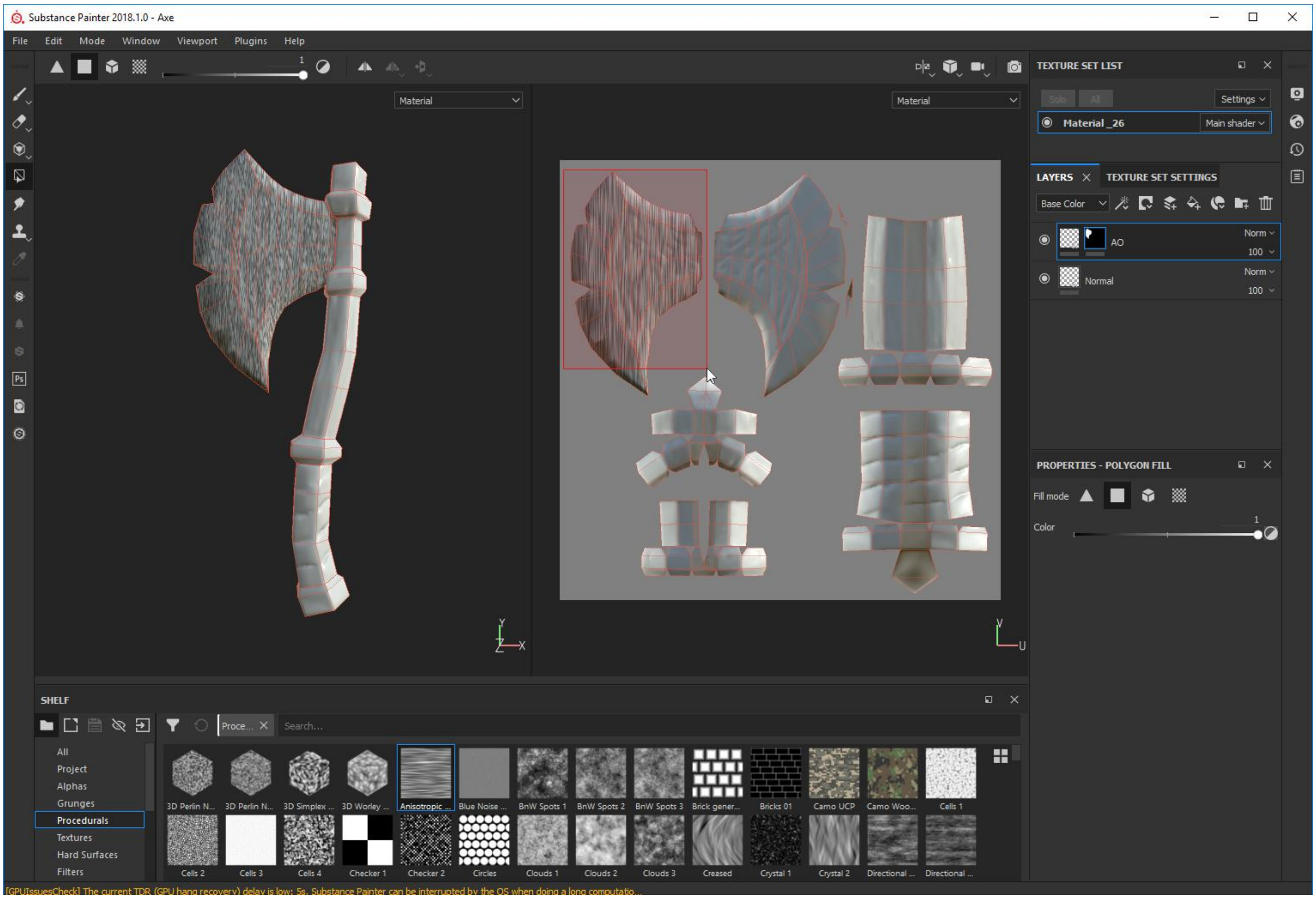
然后 Add black mask



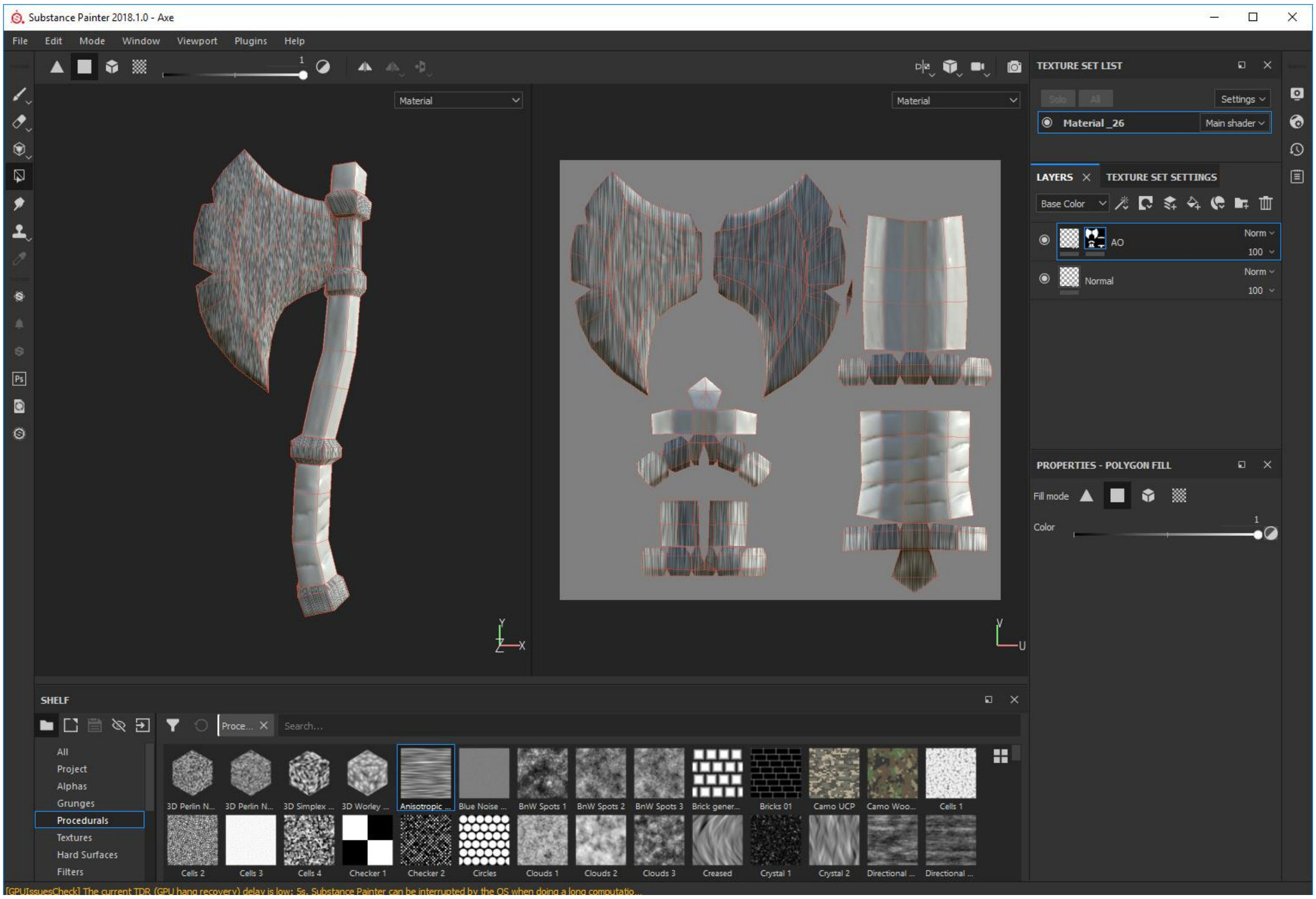
选择“Polygon Fill”



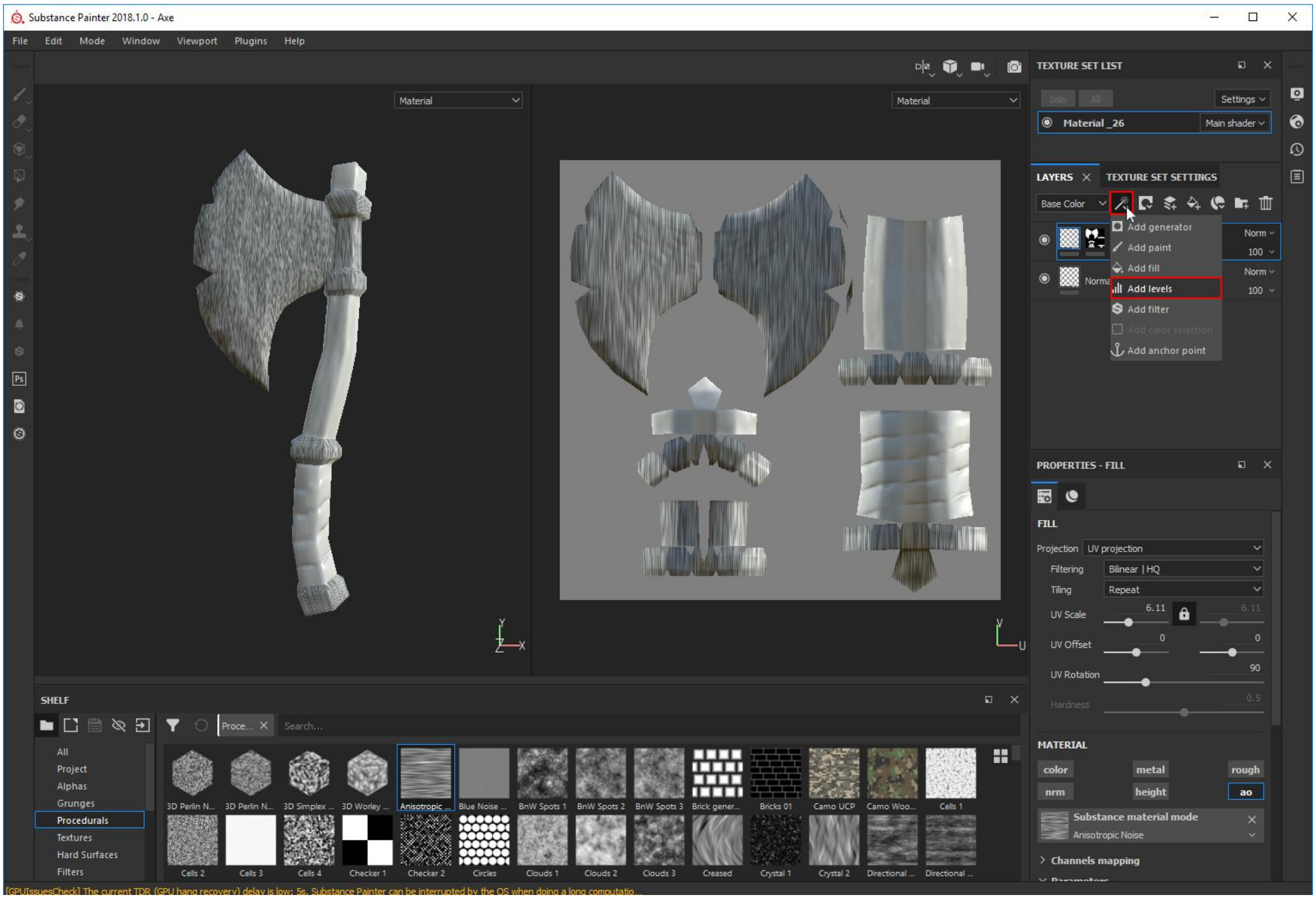
框选你要的部分 (金属部分)



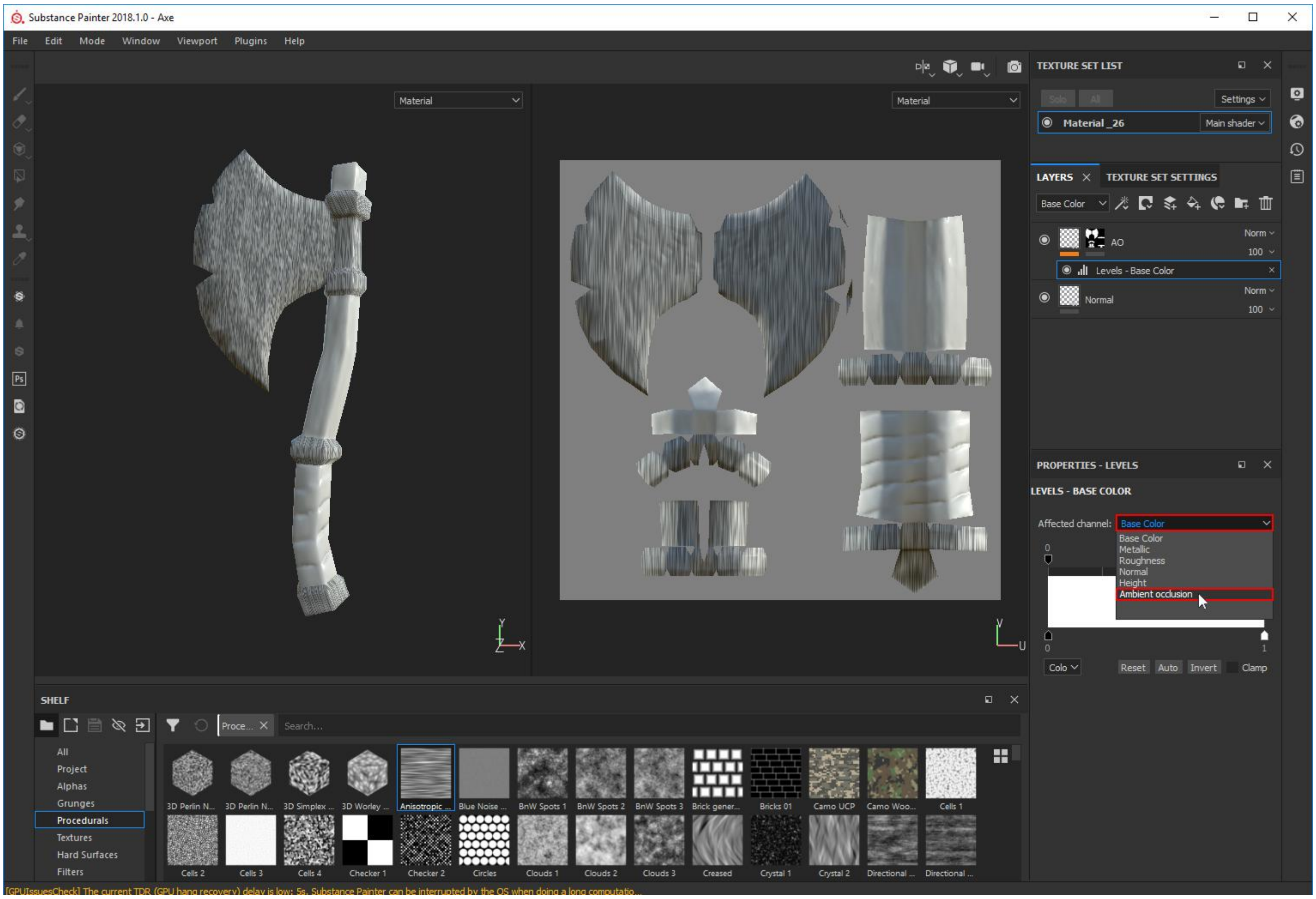
完成了 polygon fill



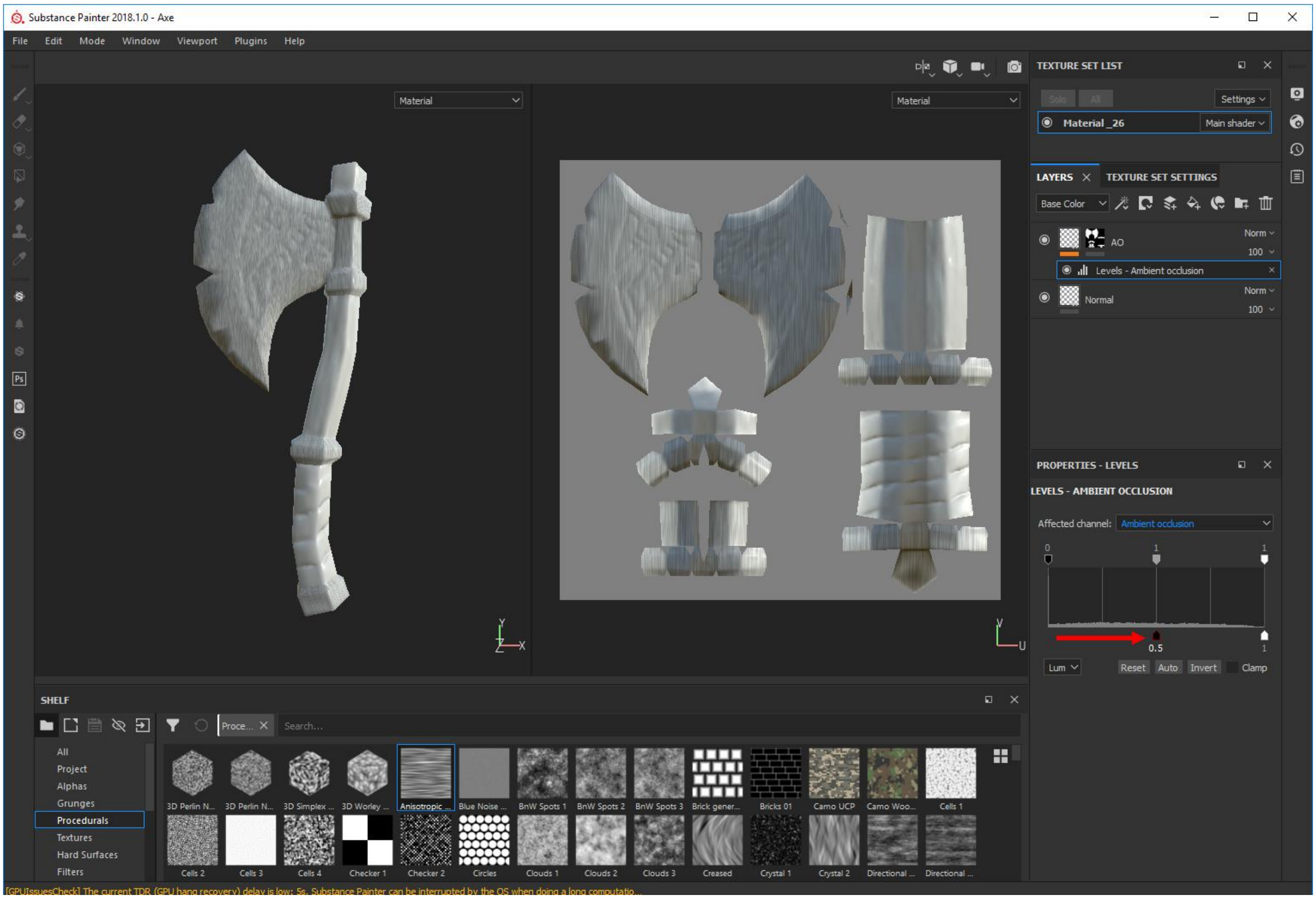
之后添加“Add levels”



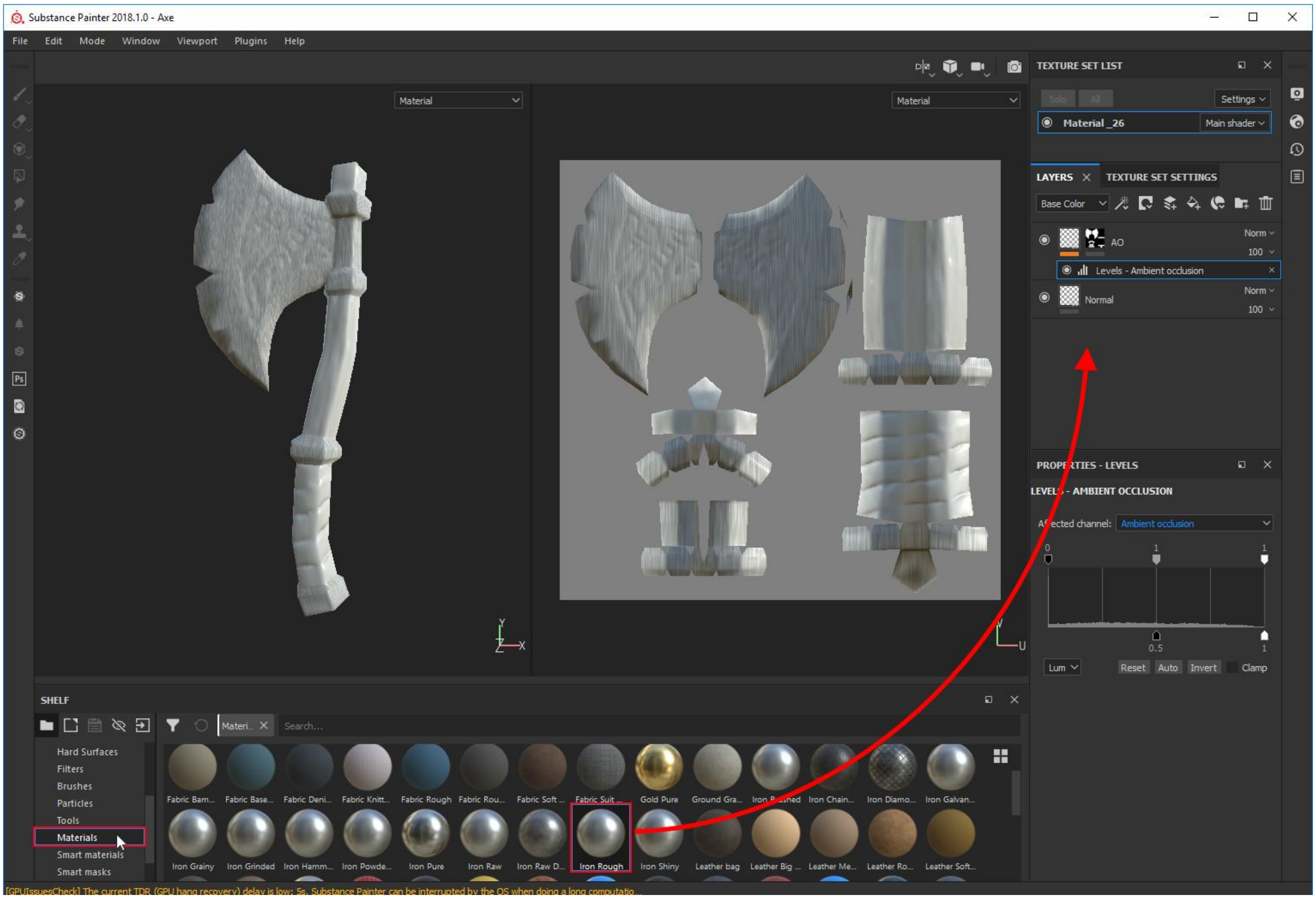
在 Affected channel: Ambient occlusion



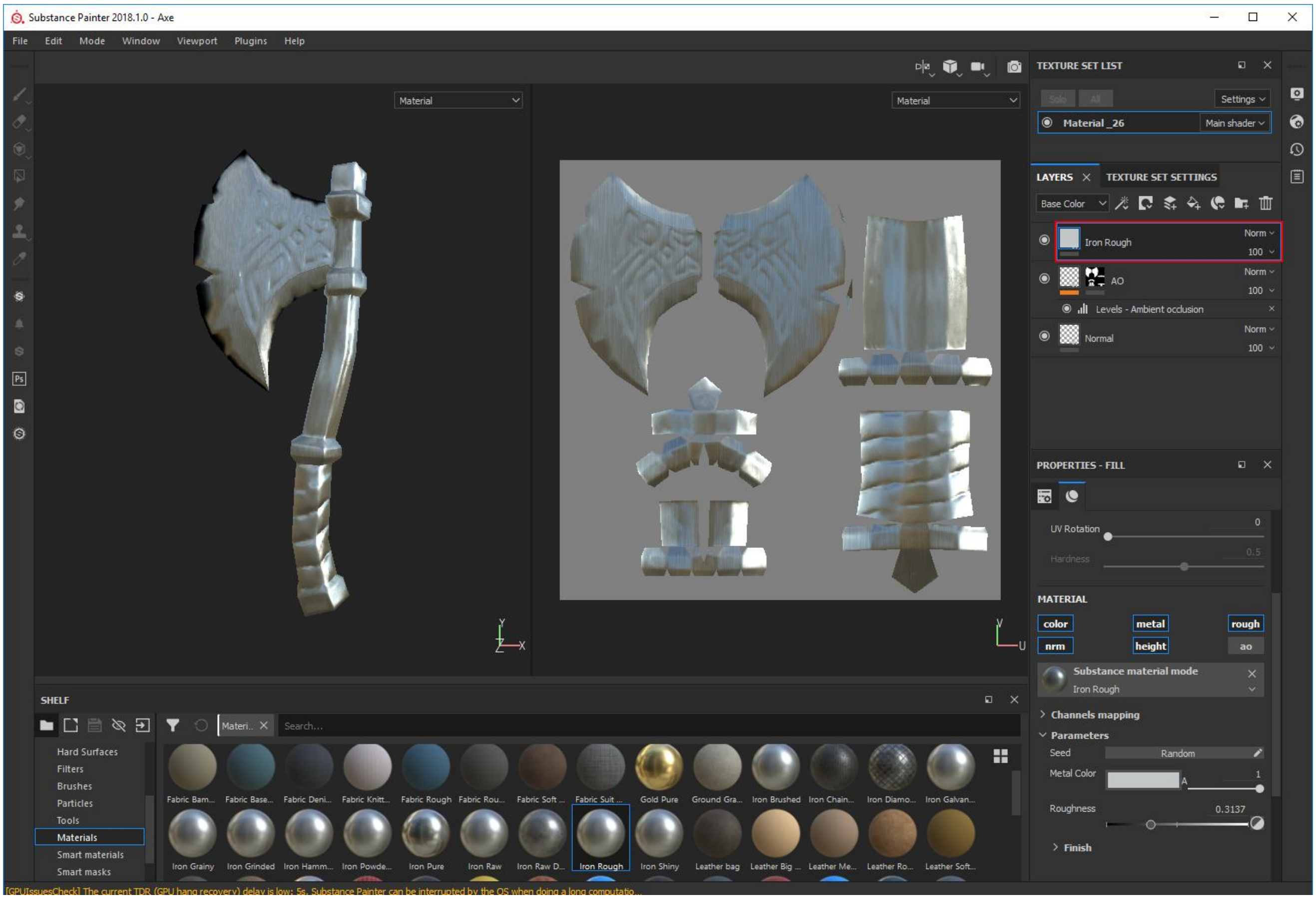
拉下面黑色的，调到 to 0.5 (会比较亮)



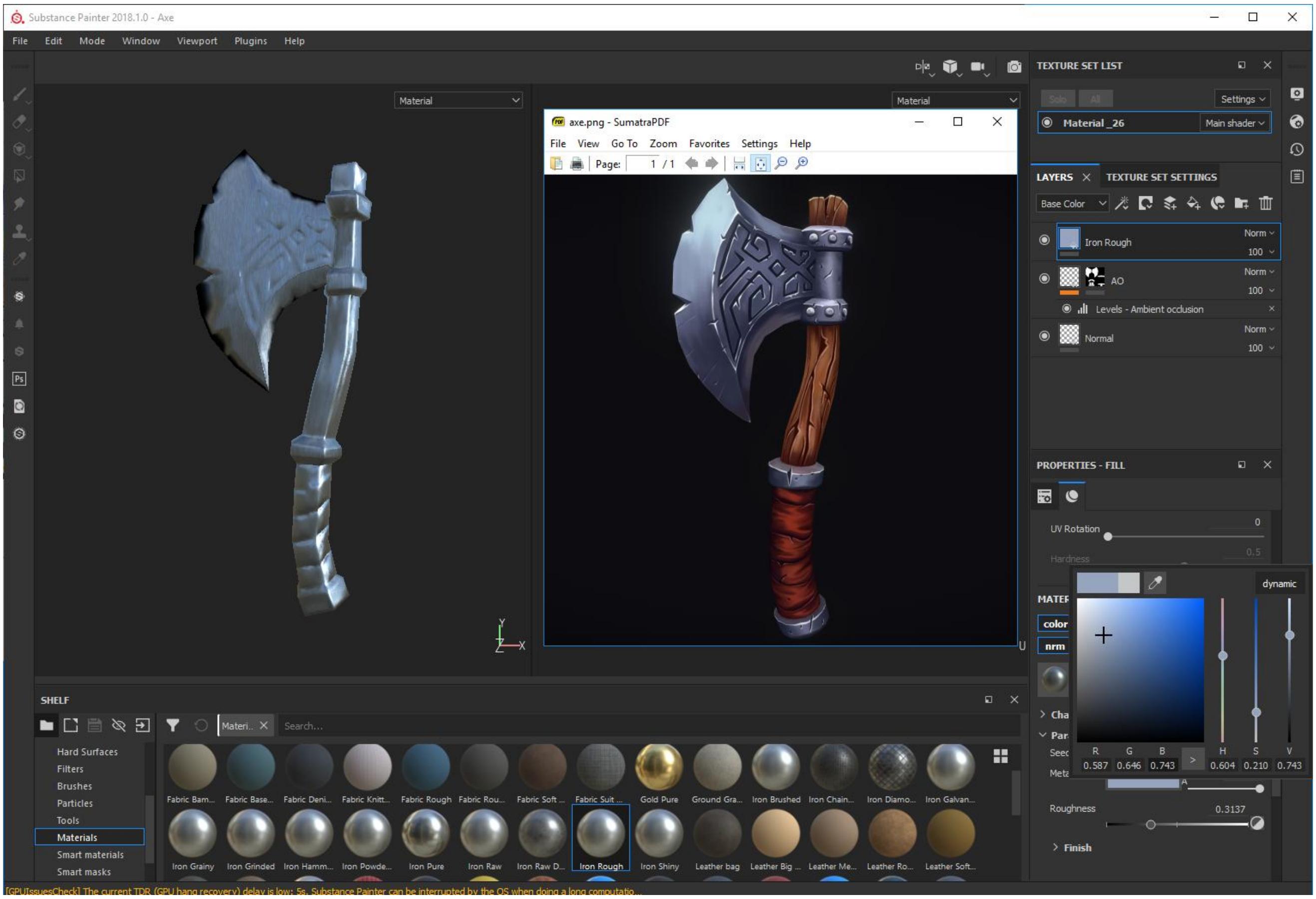
在 Material，拉 Iron Rough material 到 Layers 里



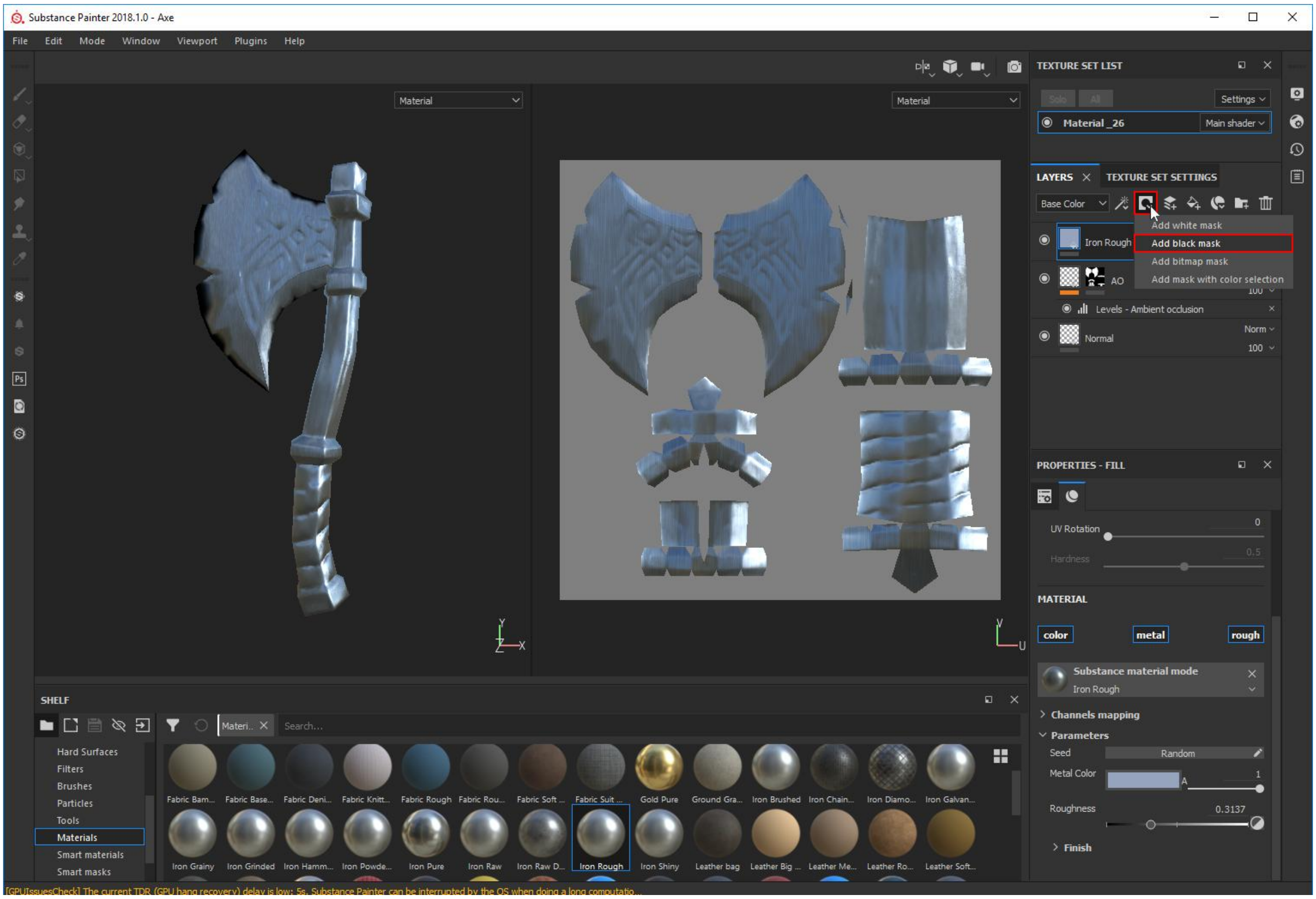
添加了 Iron Rough material 之后



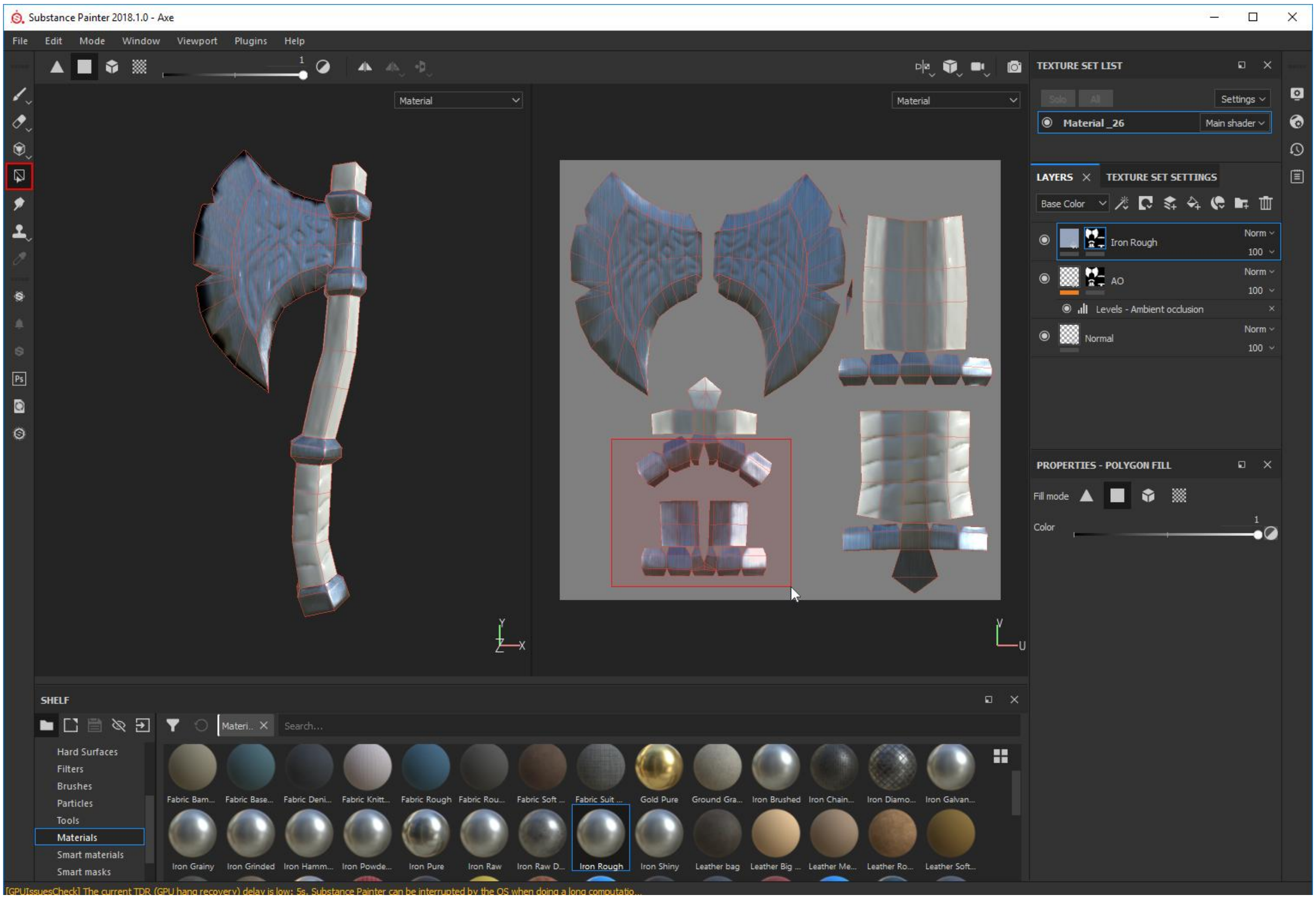
打开参考图，然后调铁的 base color



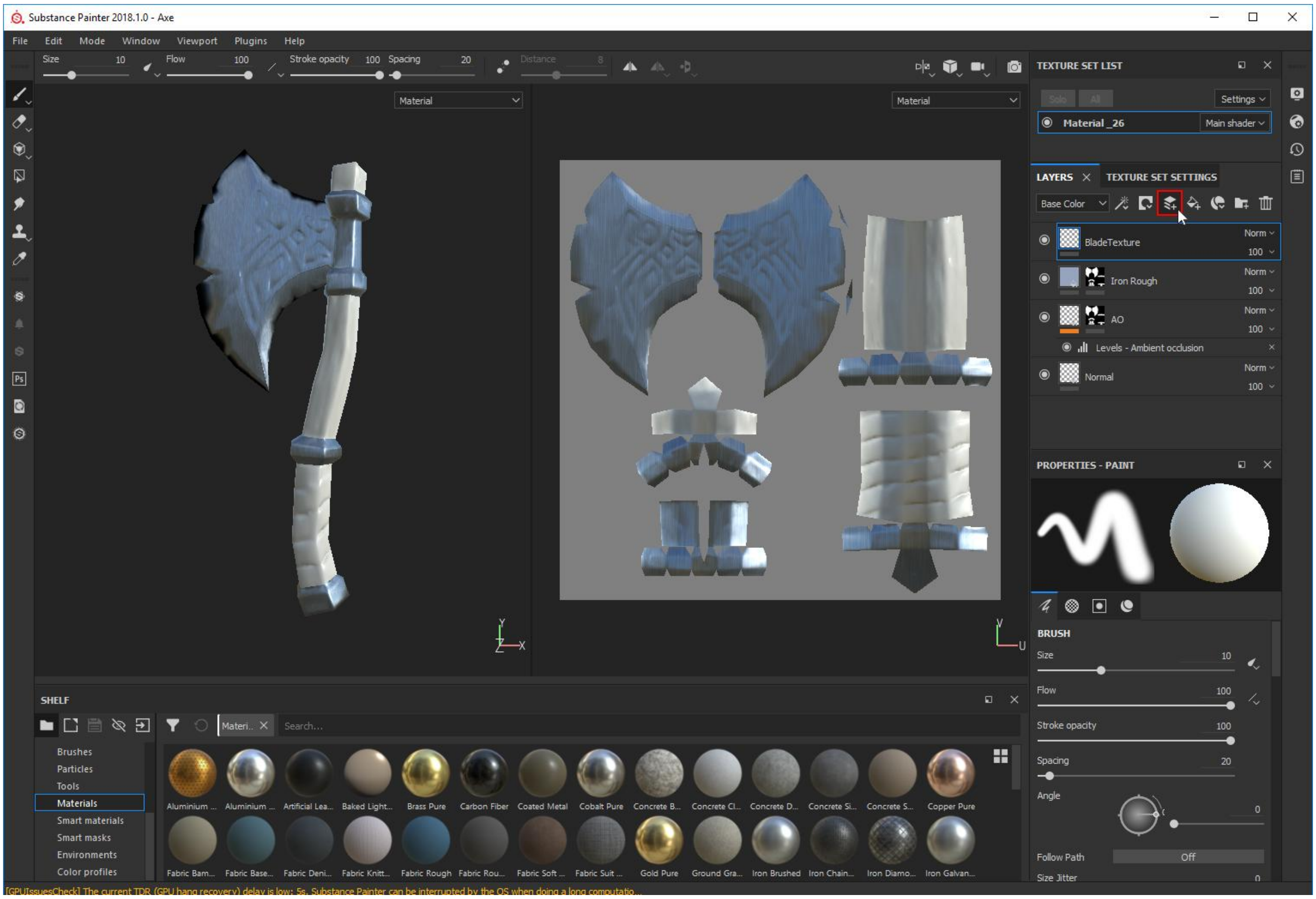
之后按 Add black mask



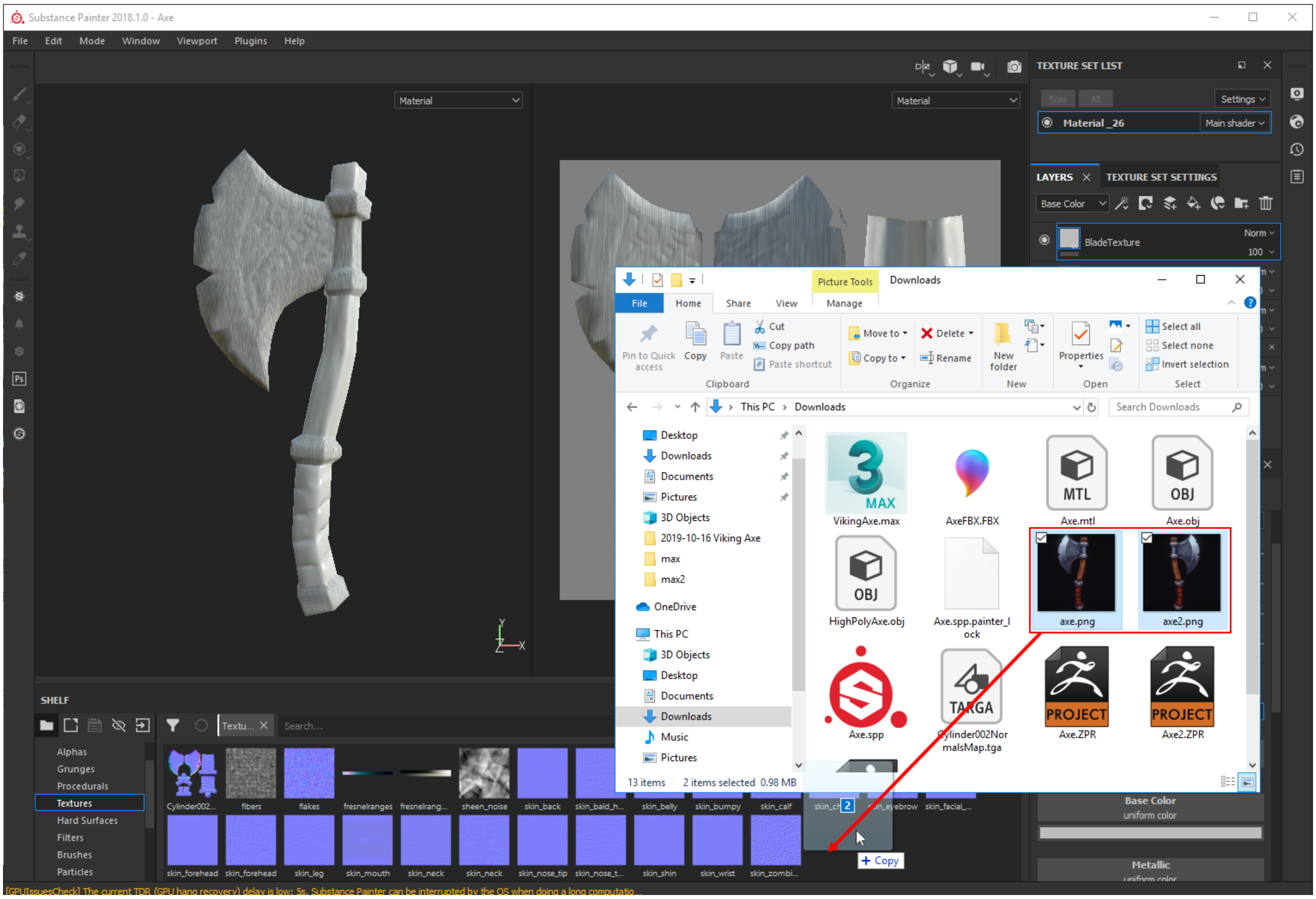
使用 Polygon Fill 然后框选金属的部分



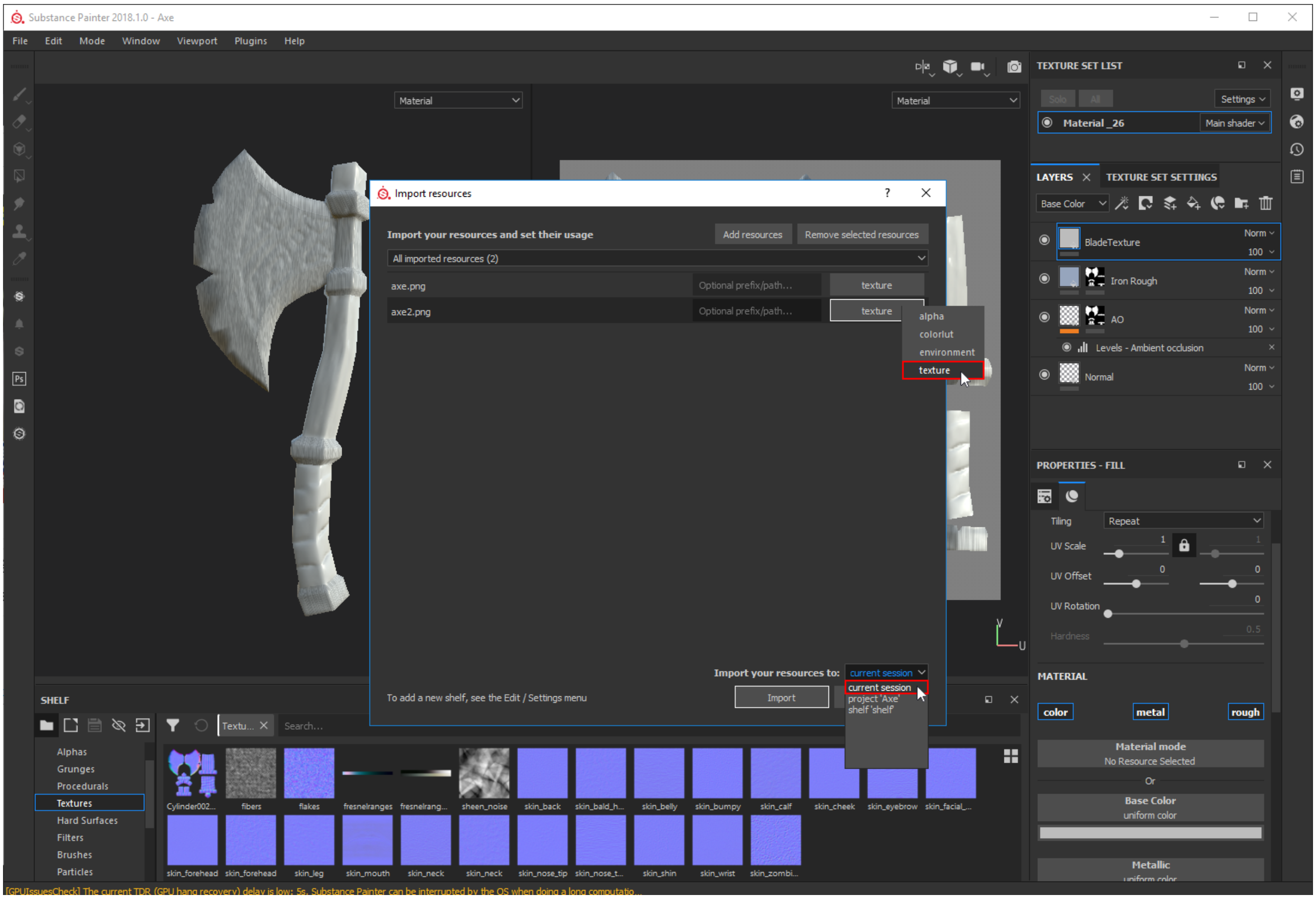
之后按 Add Layer，取名为 BladeTexture



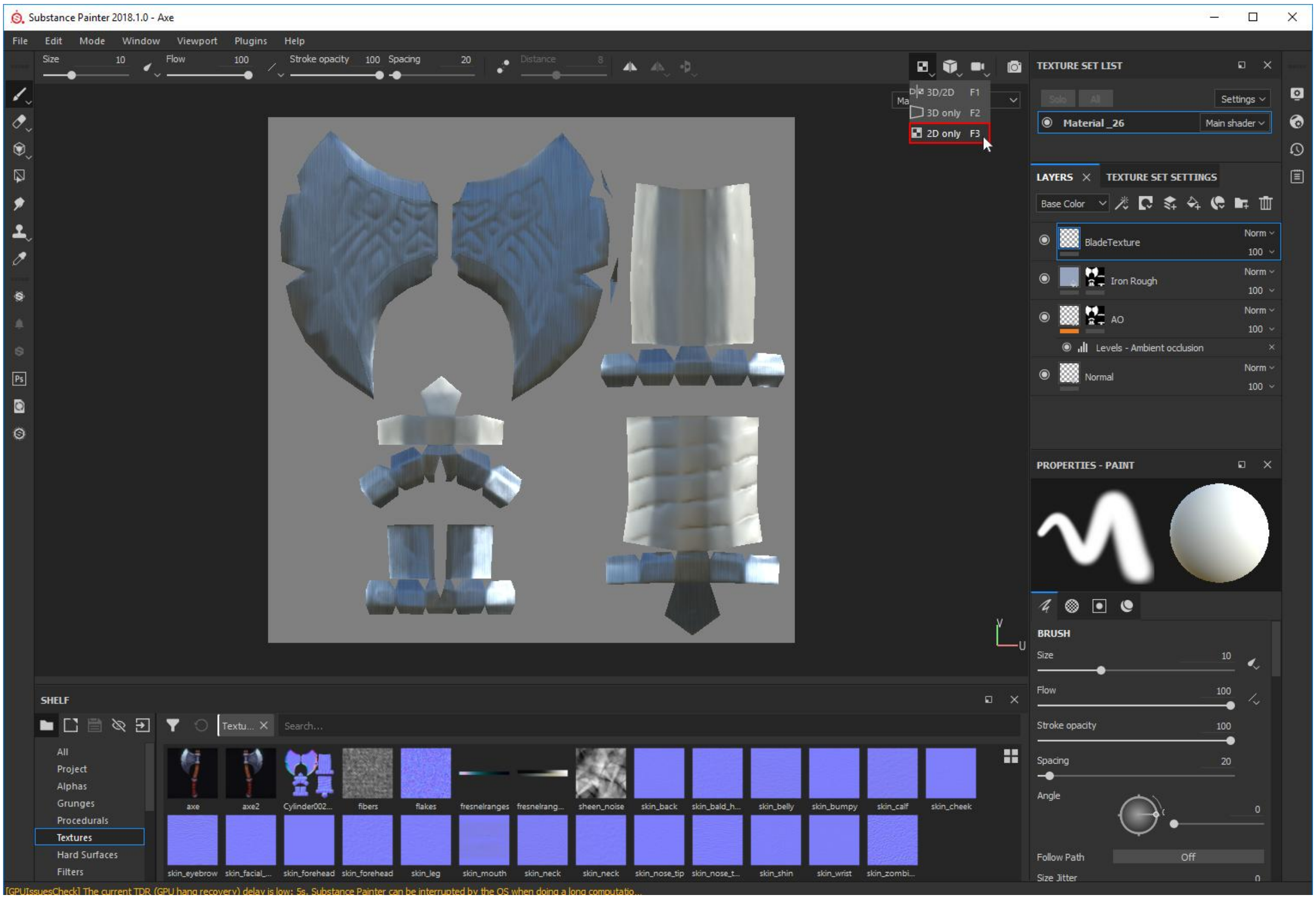
把斧头的照片导入到 textures 里面



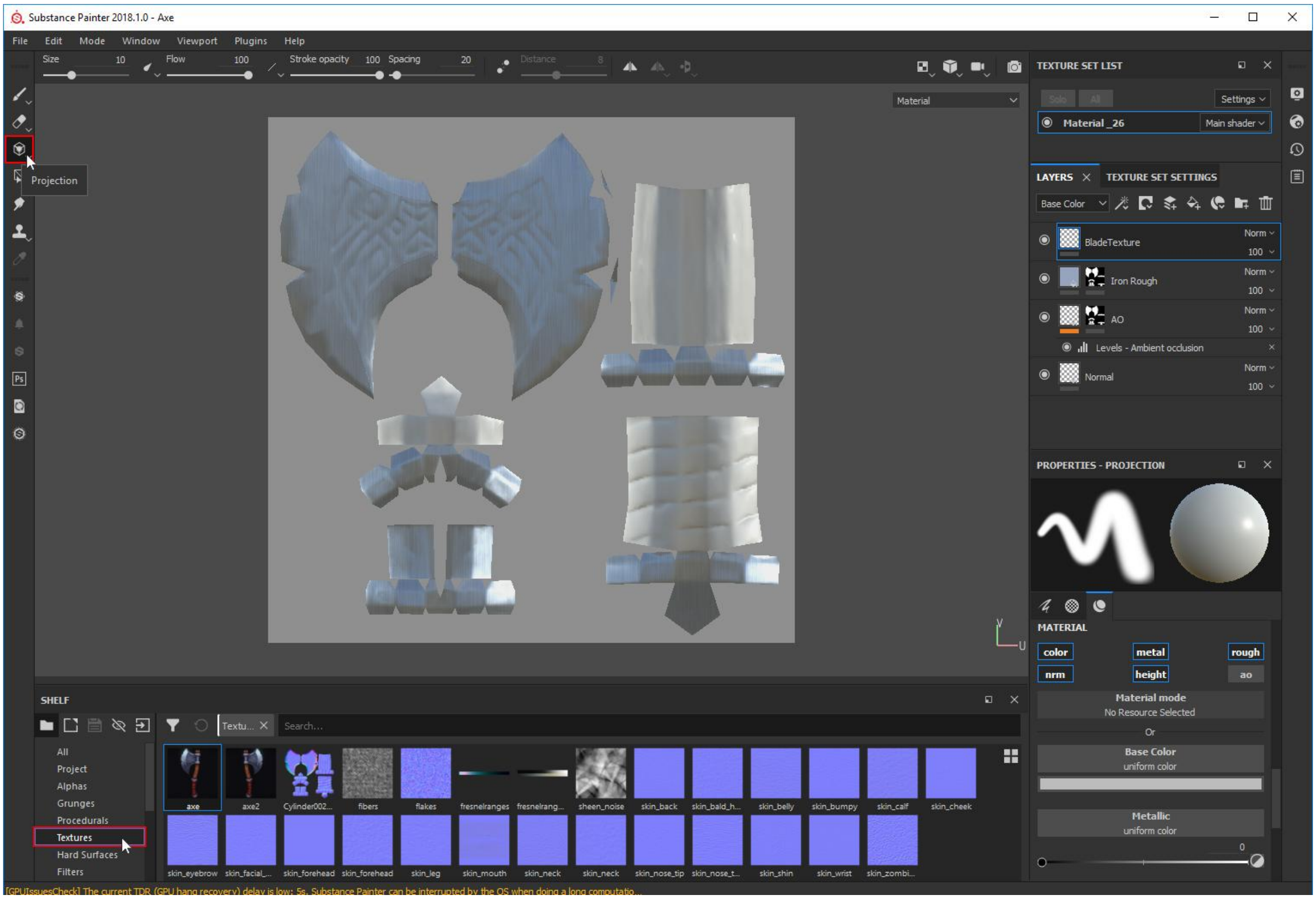
导入之后，选 texture 和 current session，然后按 Import



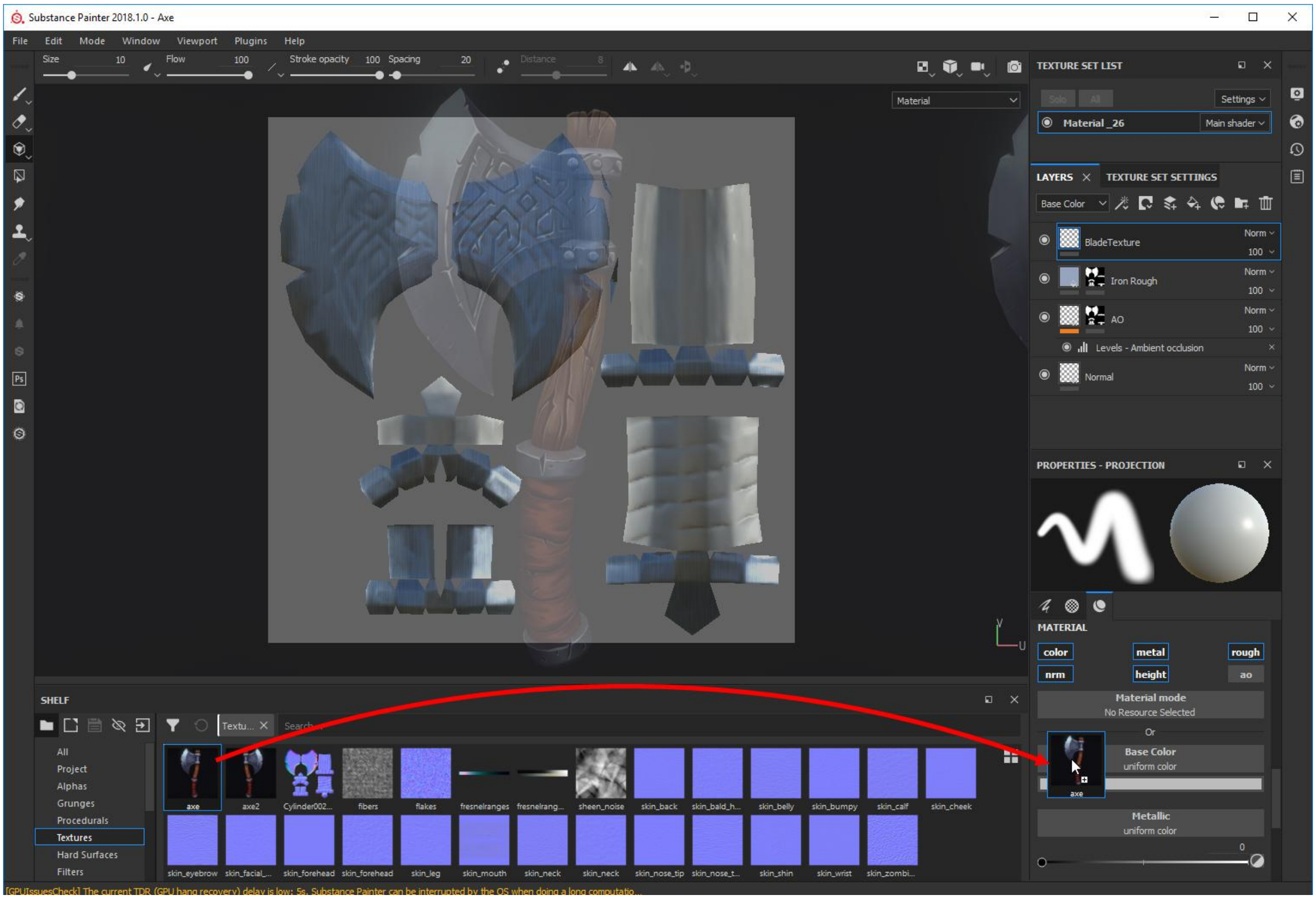
切换成 2D only



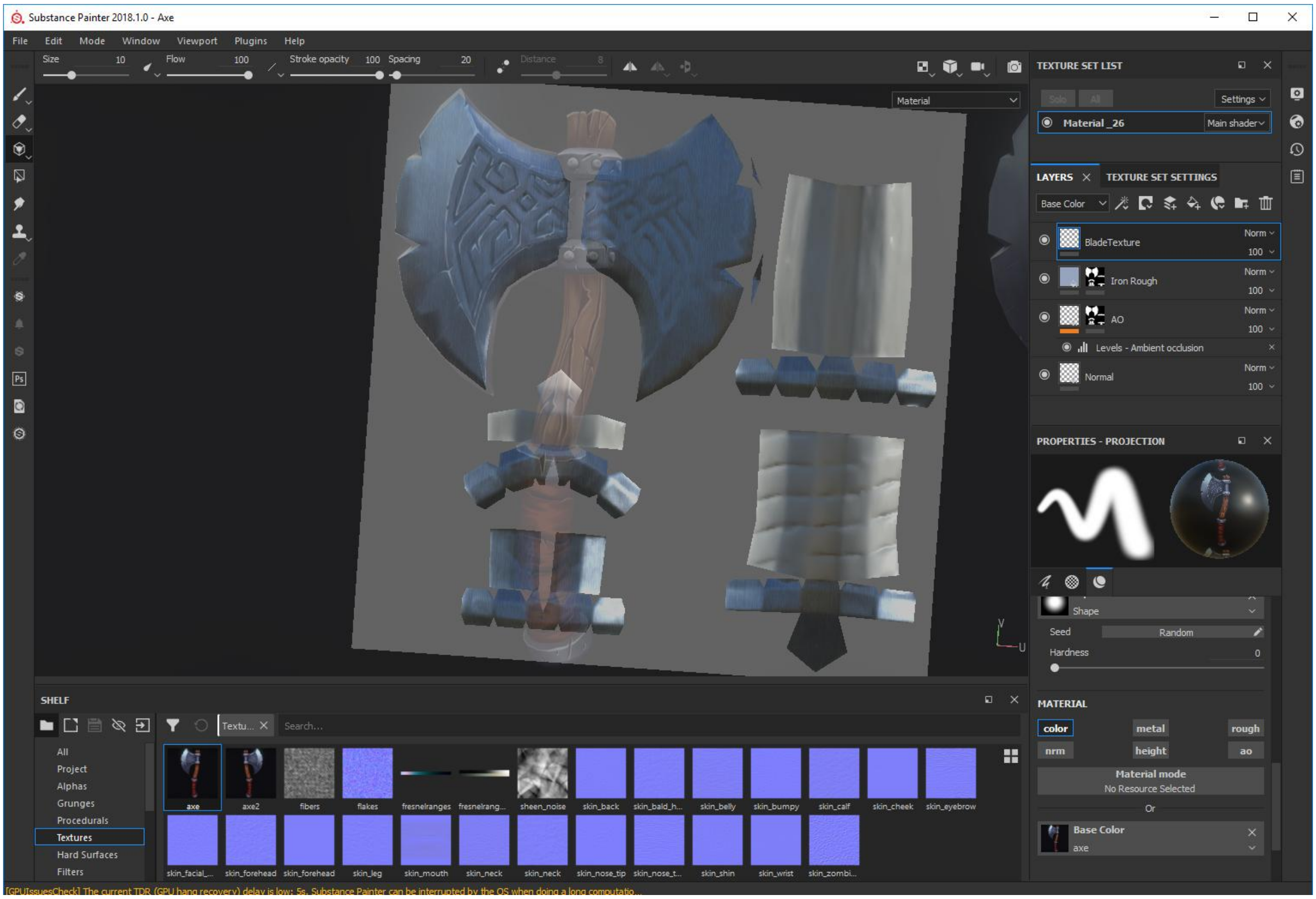
之后按 Projection



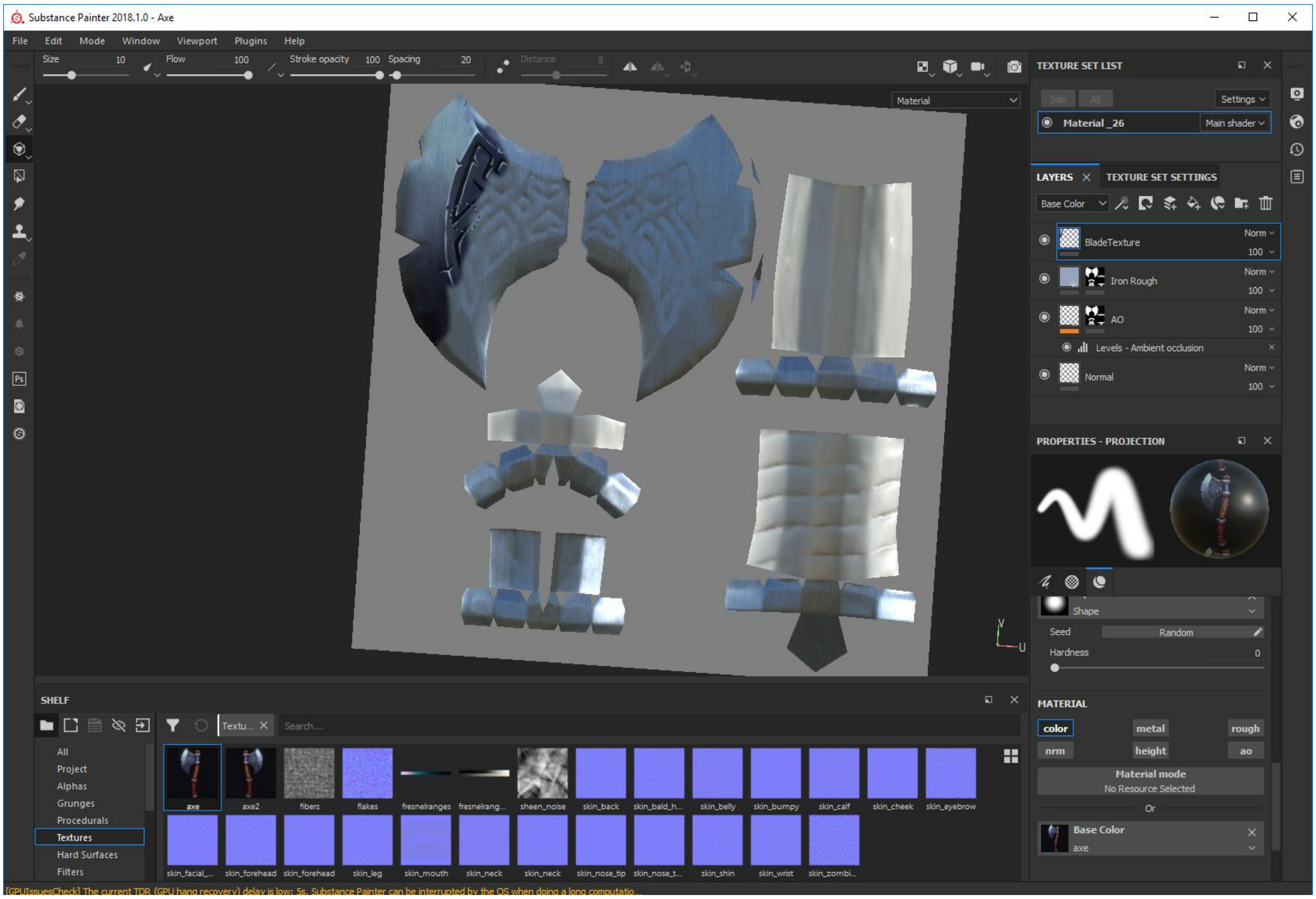
按了 Projection 之后，把斧头的照片拉到 Base Color



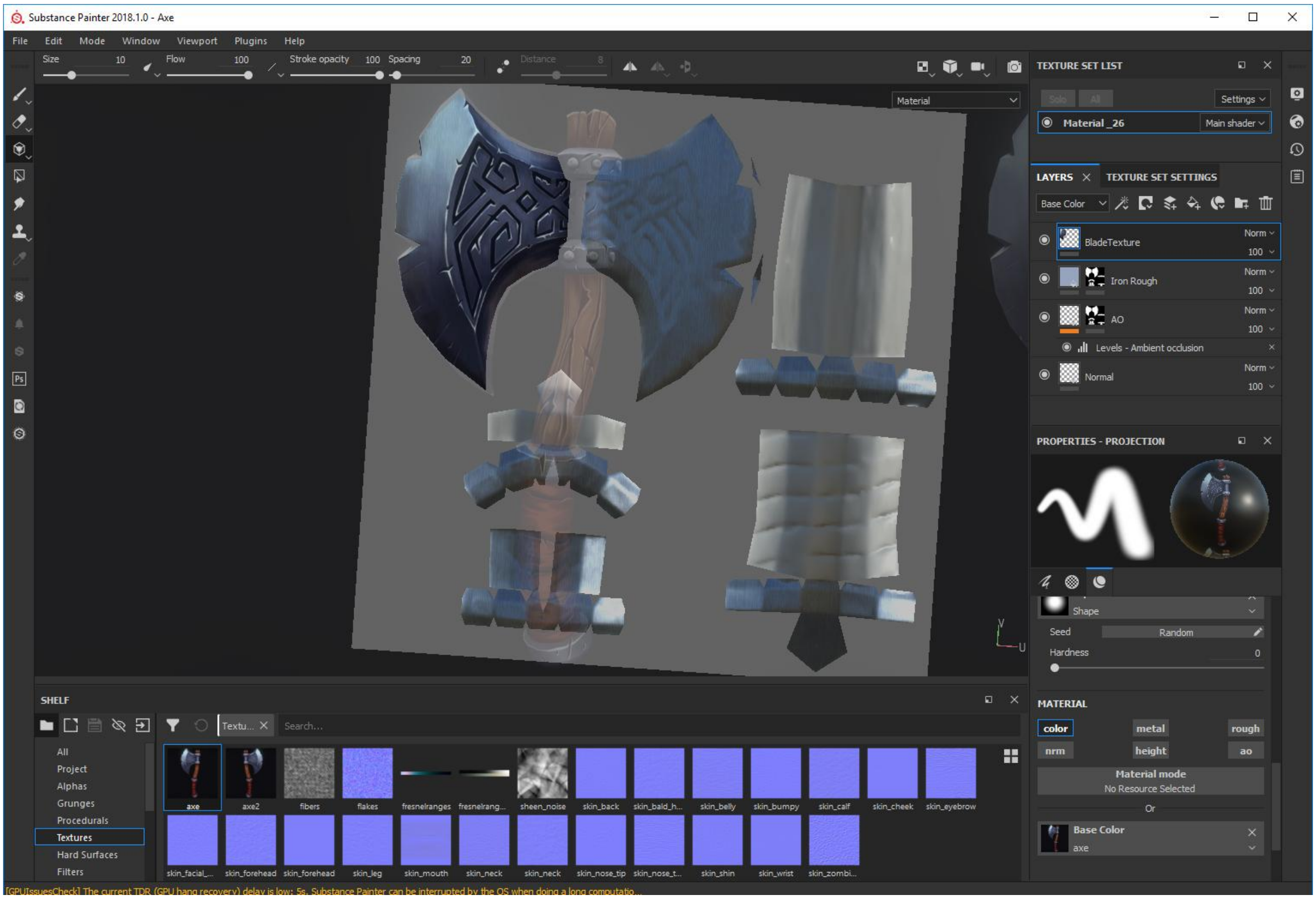
在还没有画之前，调整 UV 位置先



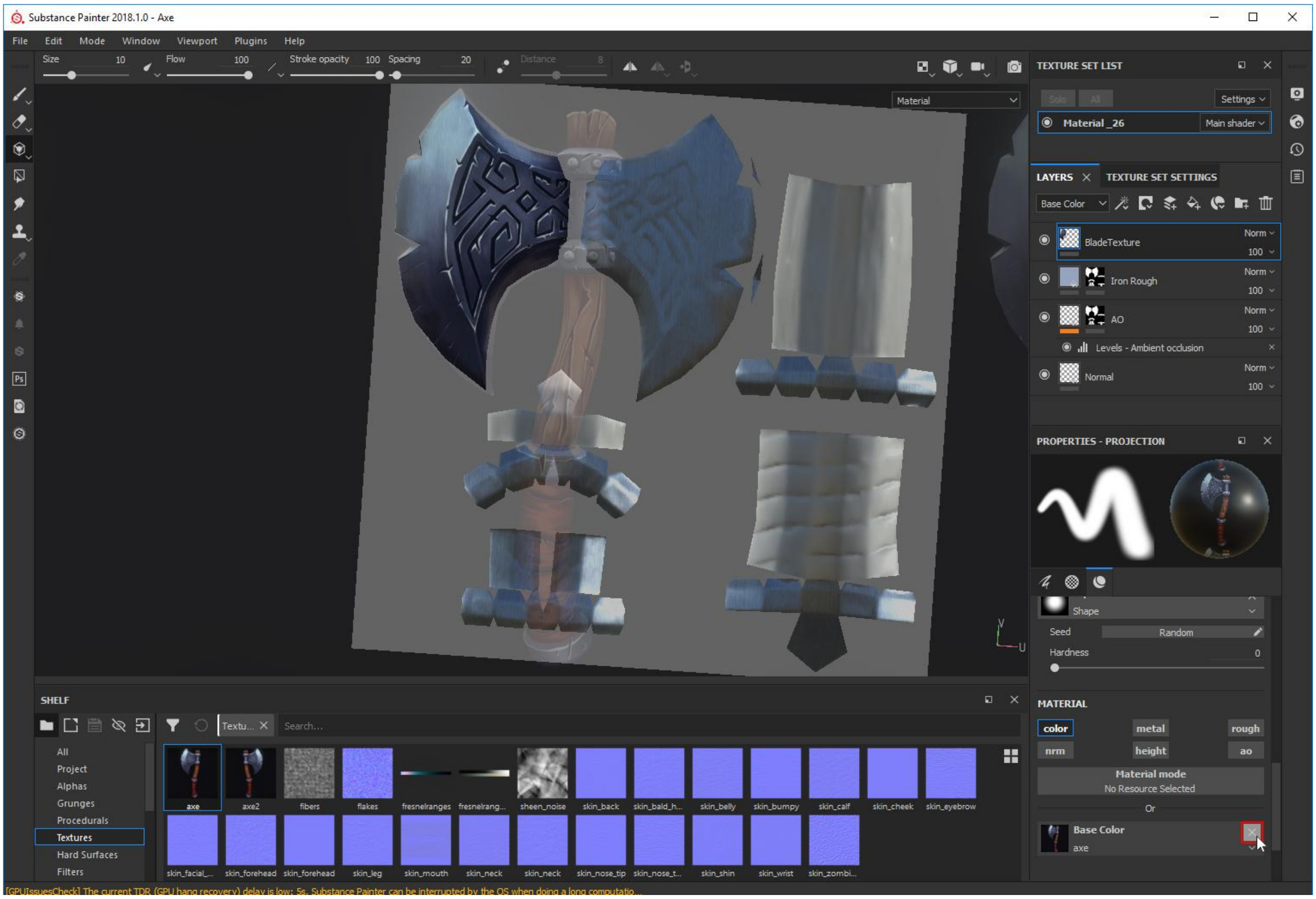
调好了后，就可以画



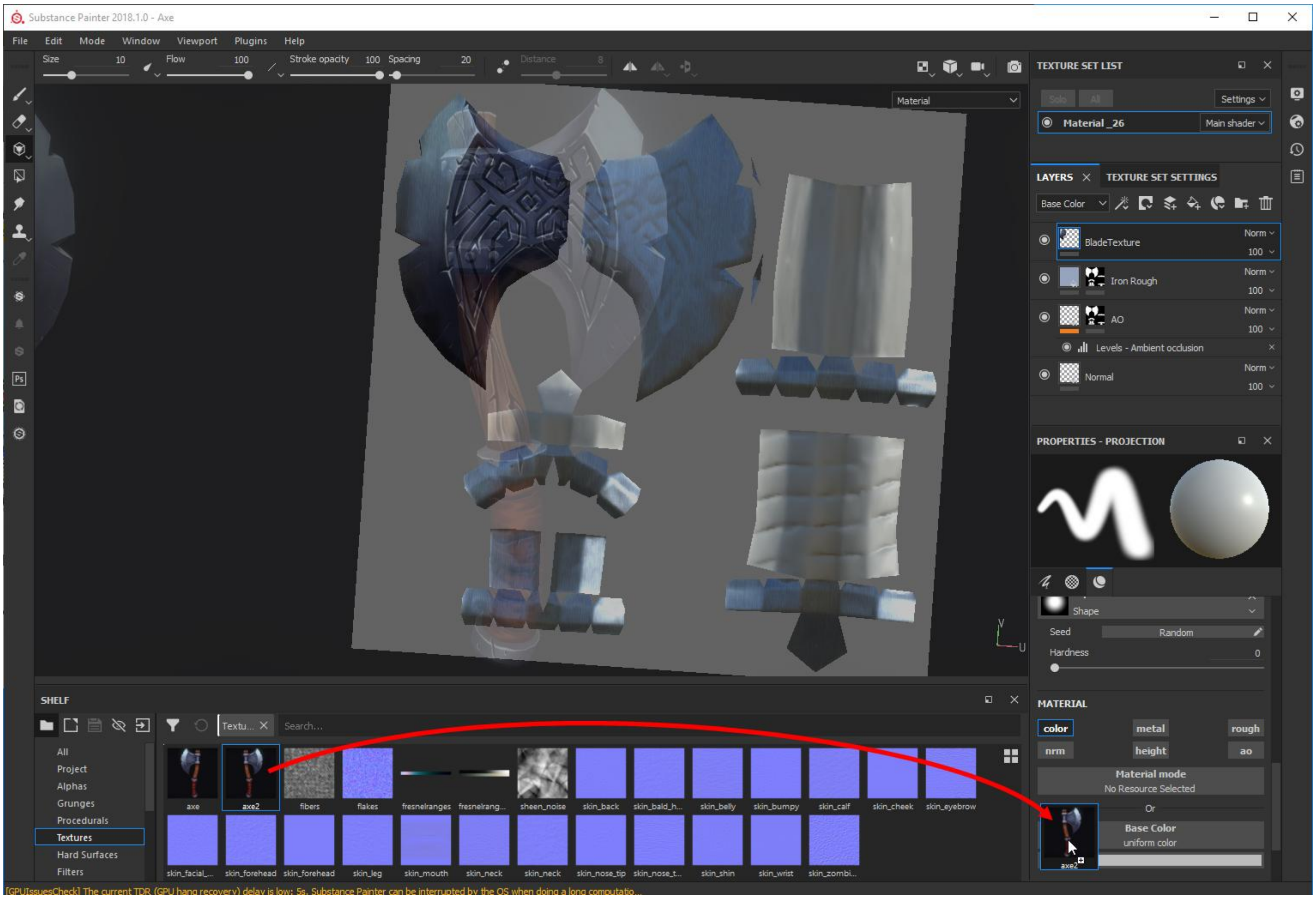
画完了斧头的其中一个刀面



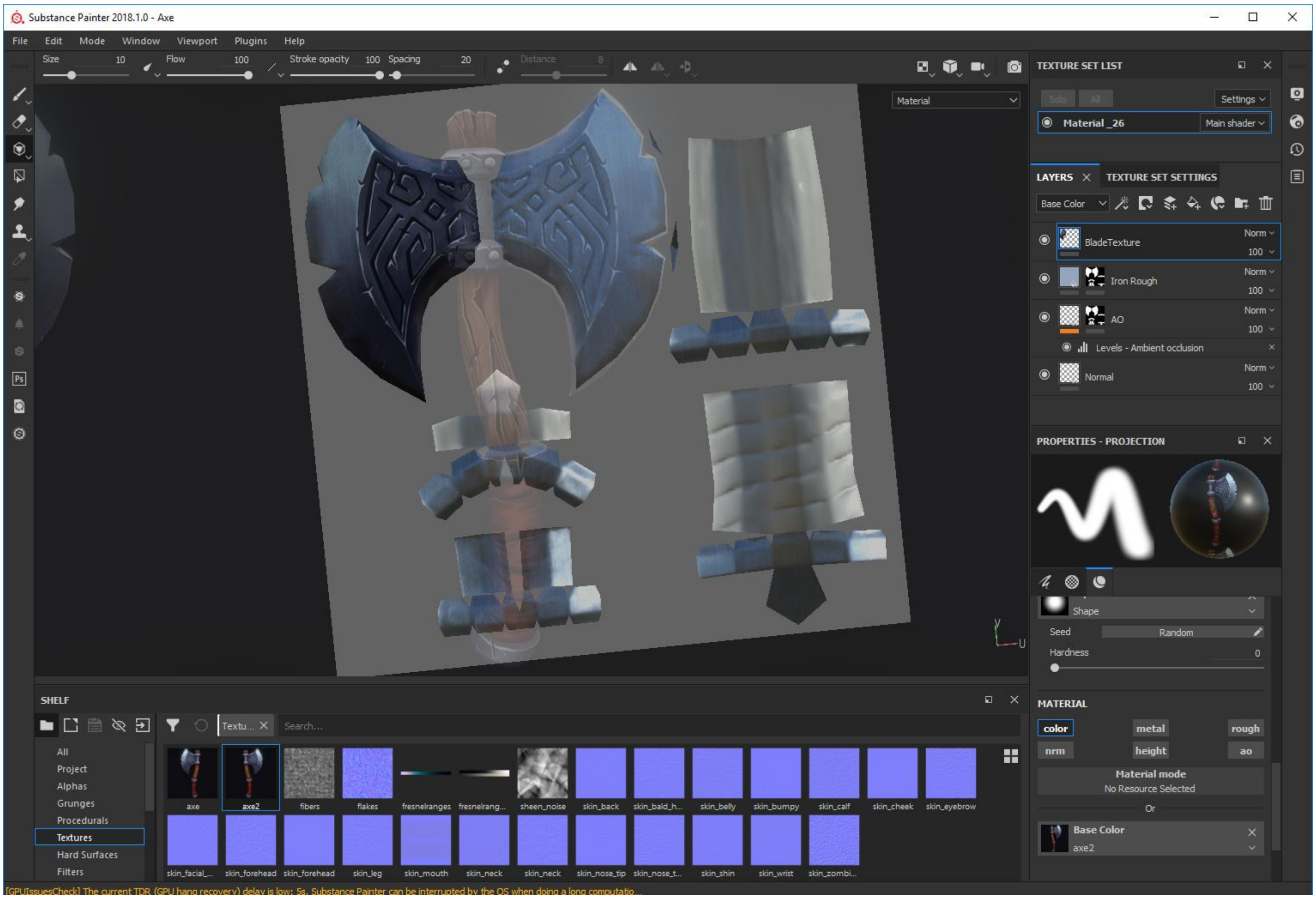
按下打叉“X”关掉斧头的照片



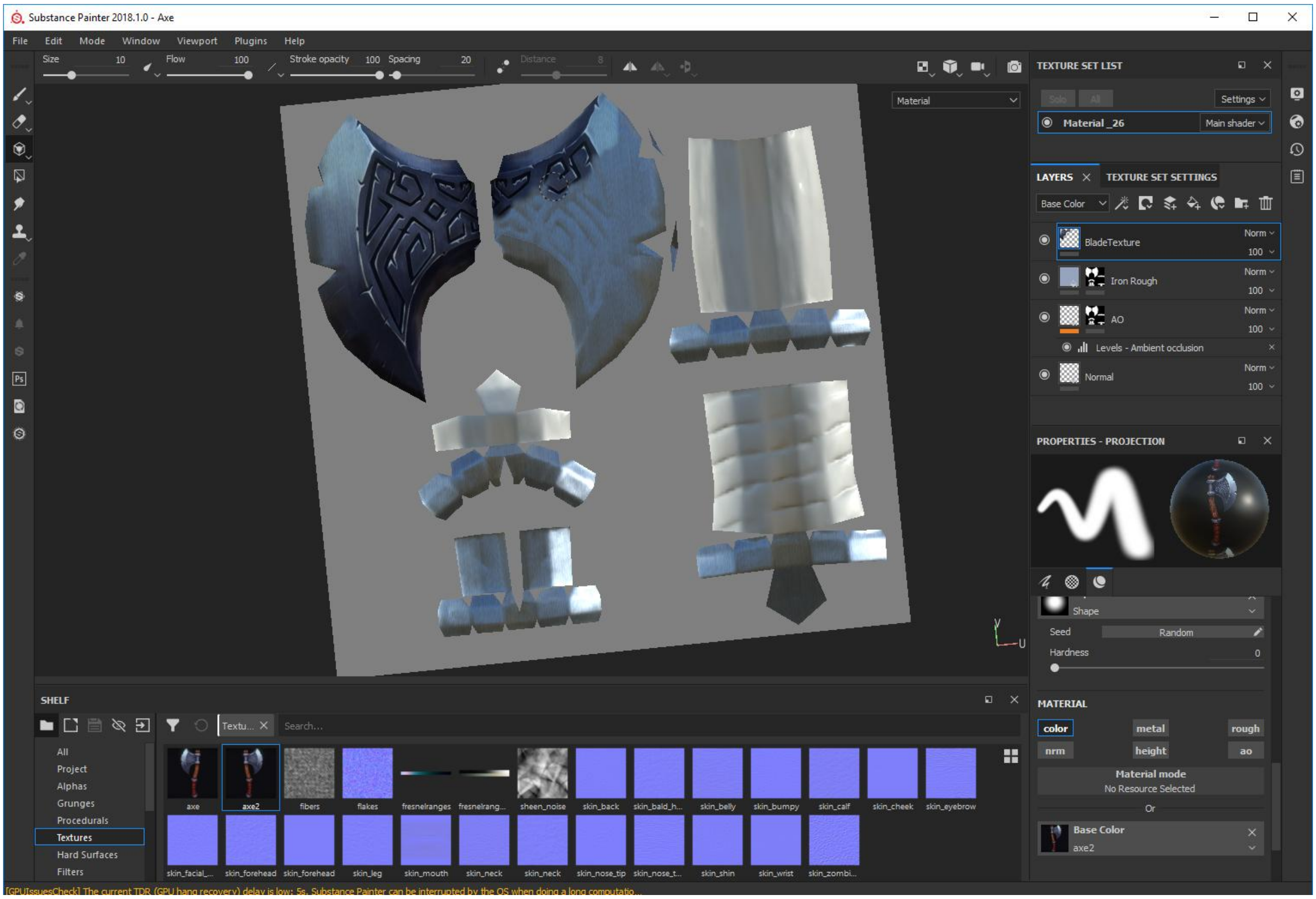
我们再把另外一张拉到 Base color



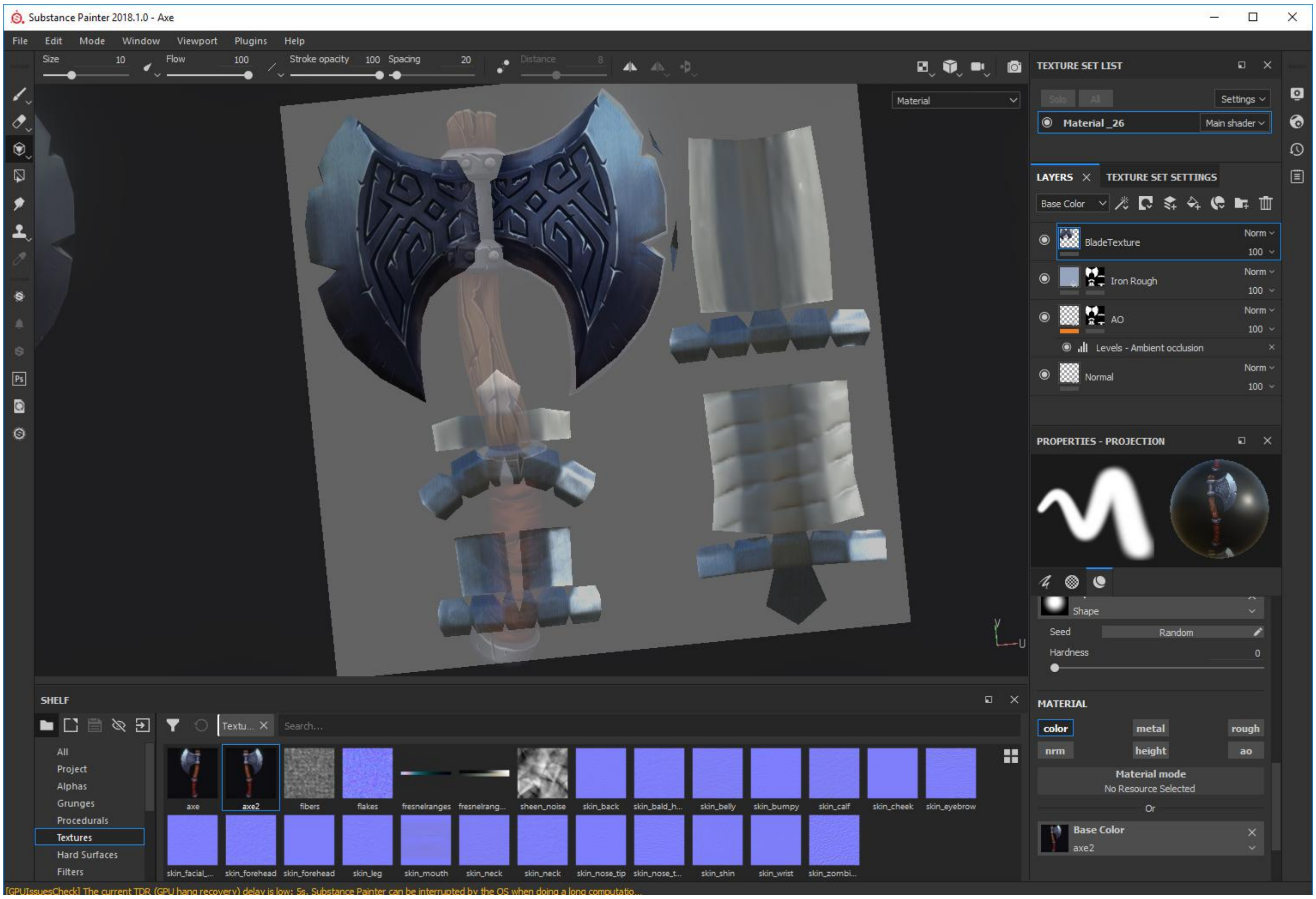
重复同样的步骤，在还没有画之前，先调整 UV 位置先



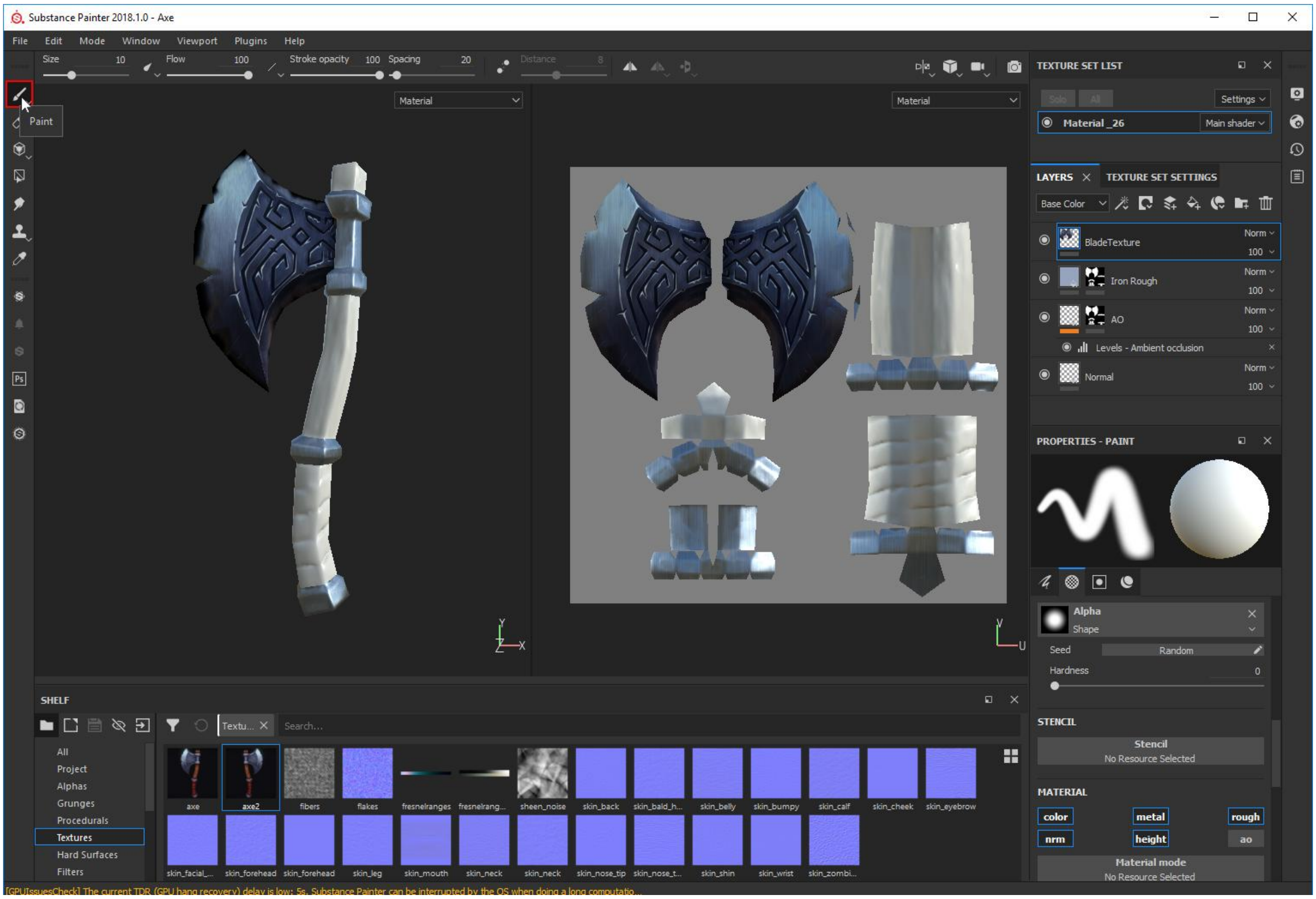
调好之后，就可以开始画



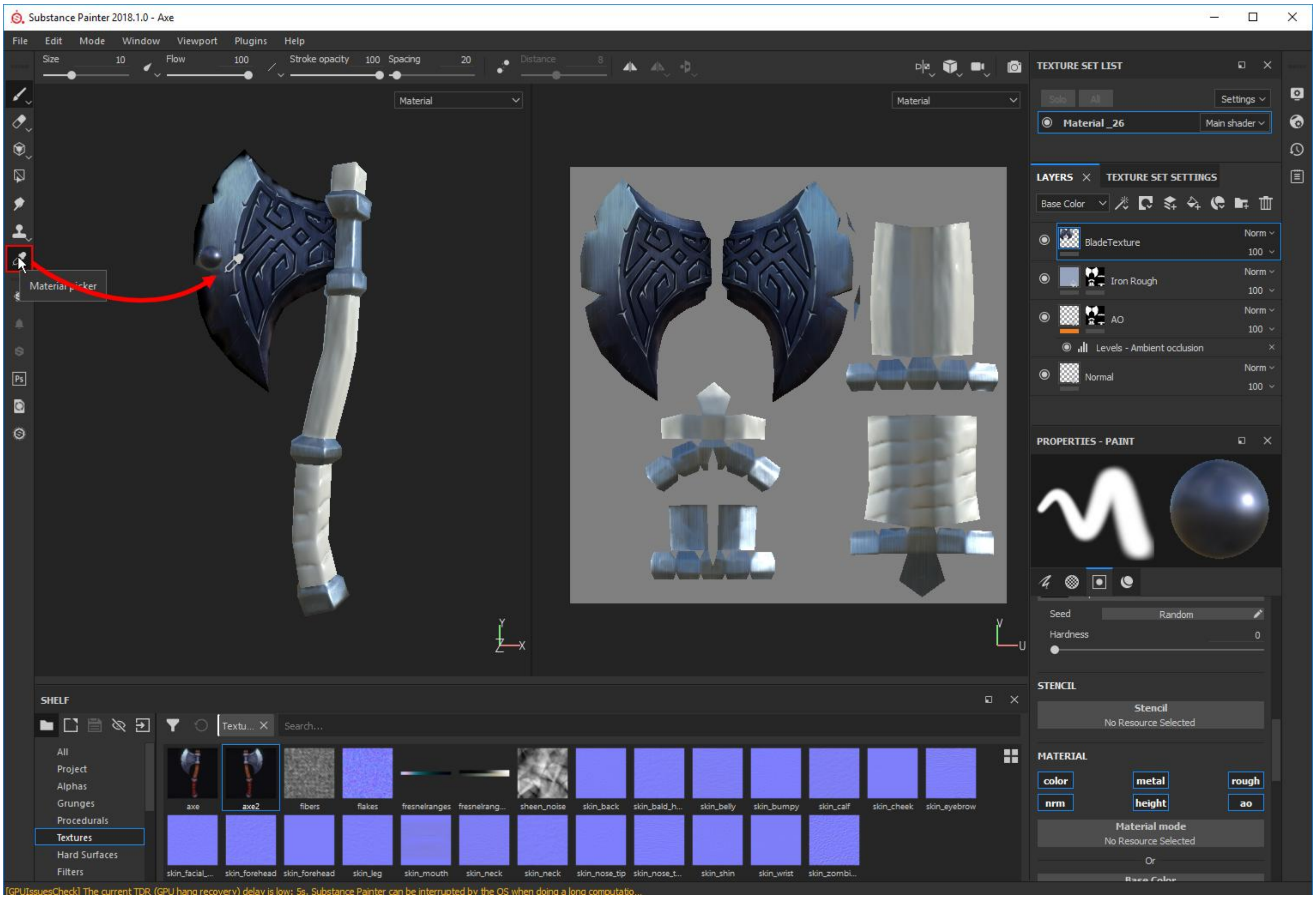
画完之后



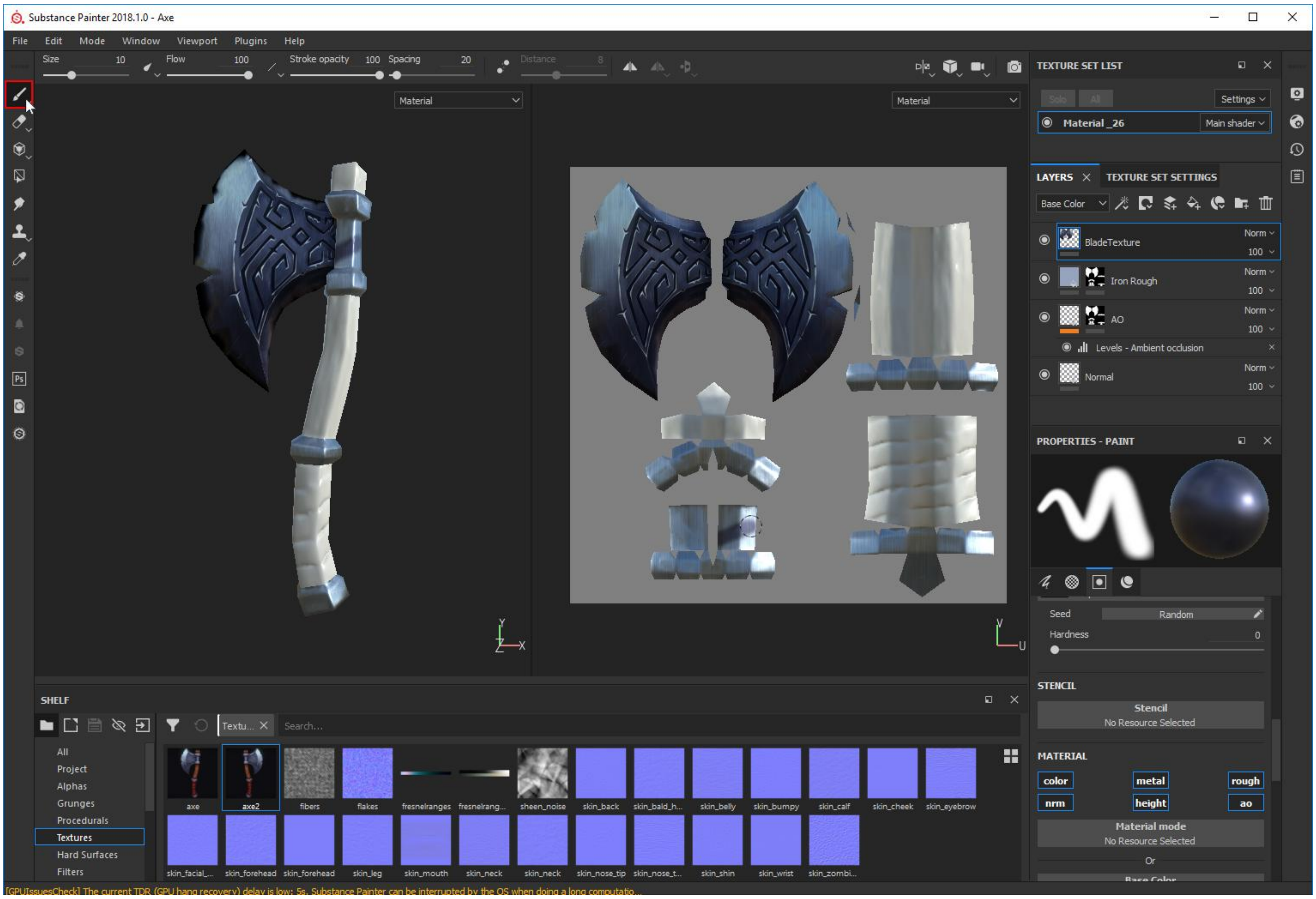
按下 Paint， 就可以关掉 Projection



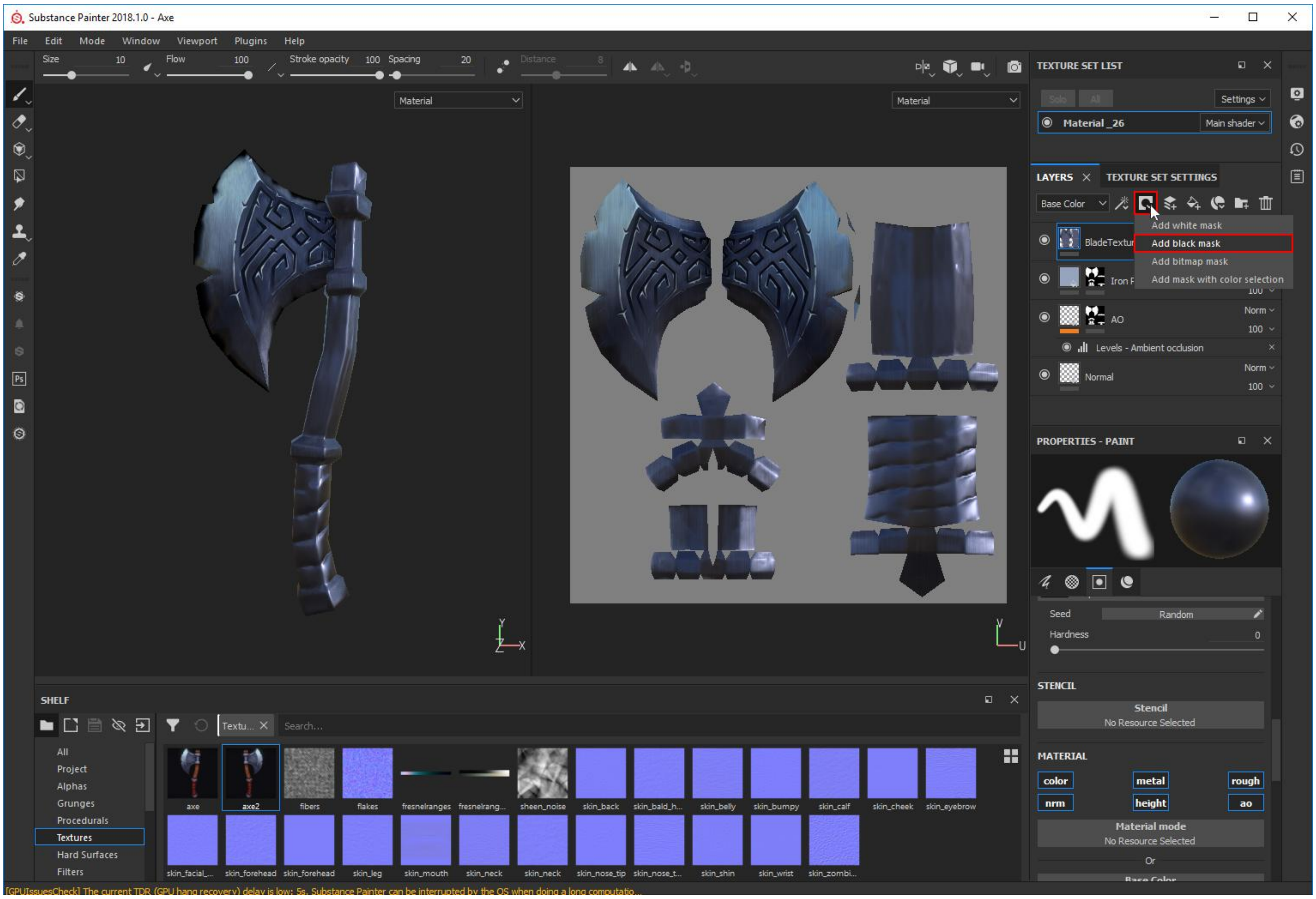
按下 Material Picker，然后吸取刚刚画的颜色



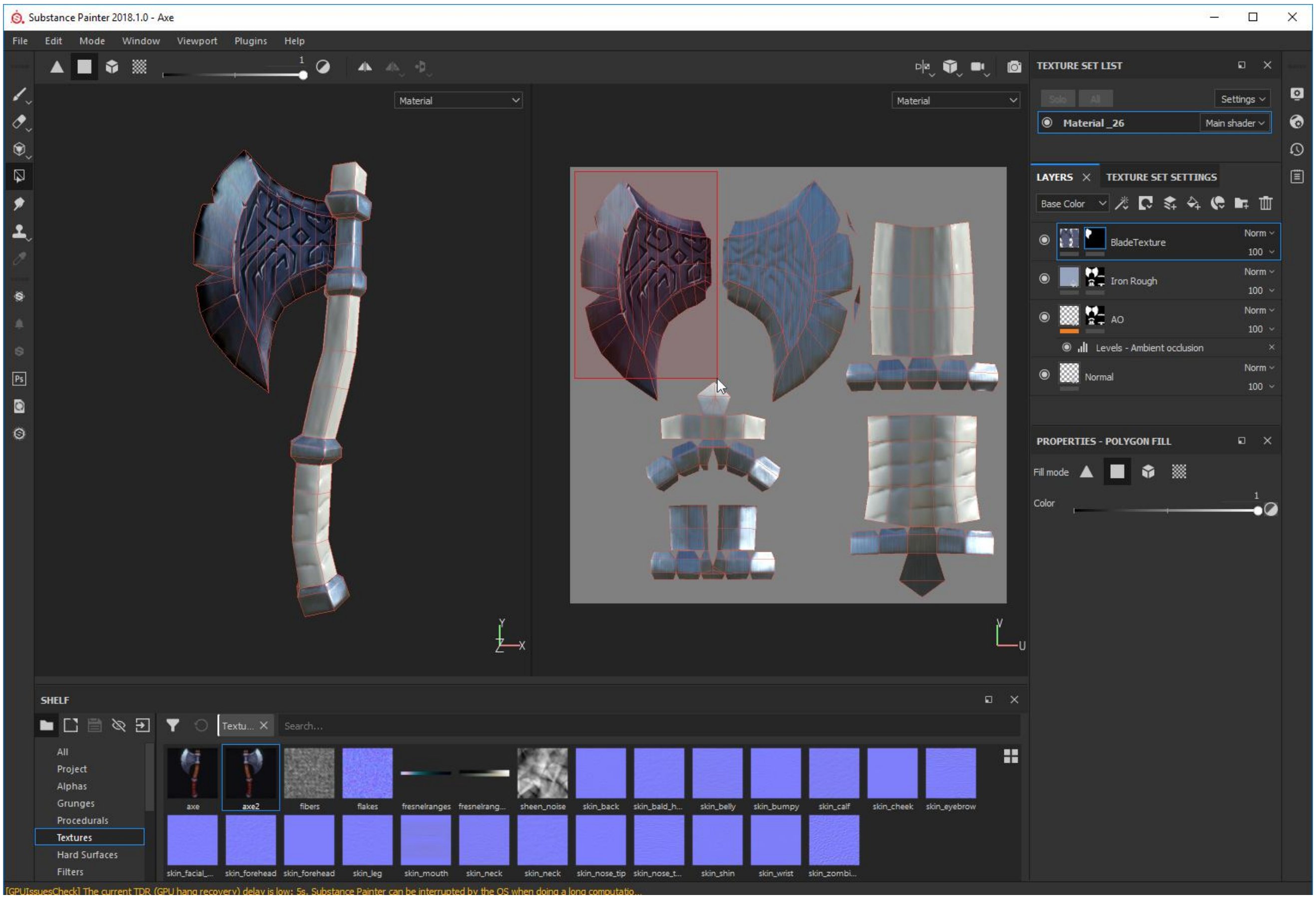
吸取颜色之后，按 Paint，把金属的部分给上色



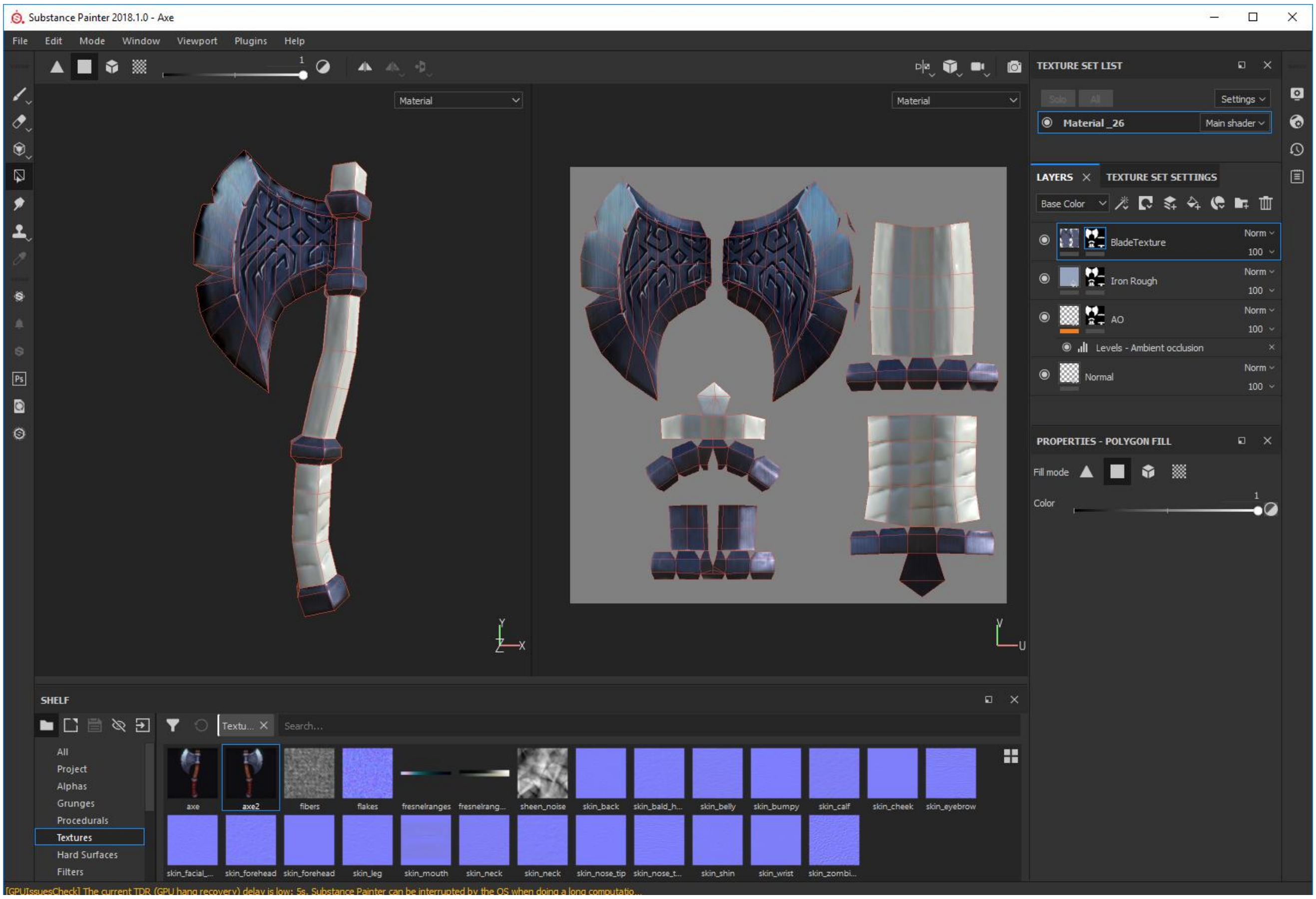
如果不是很会画，可以涂完全部，然后按 Add black mask



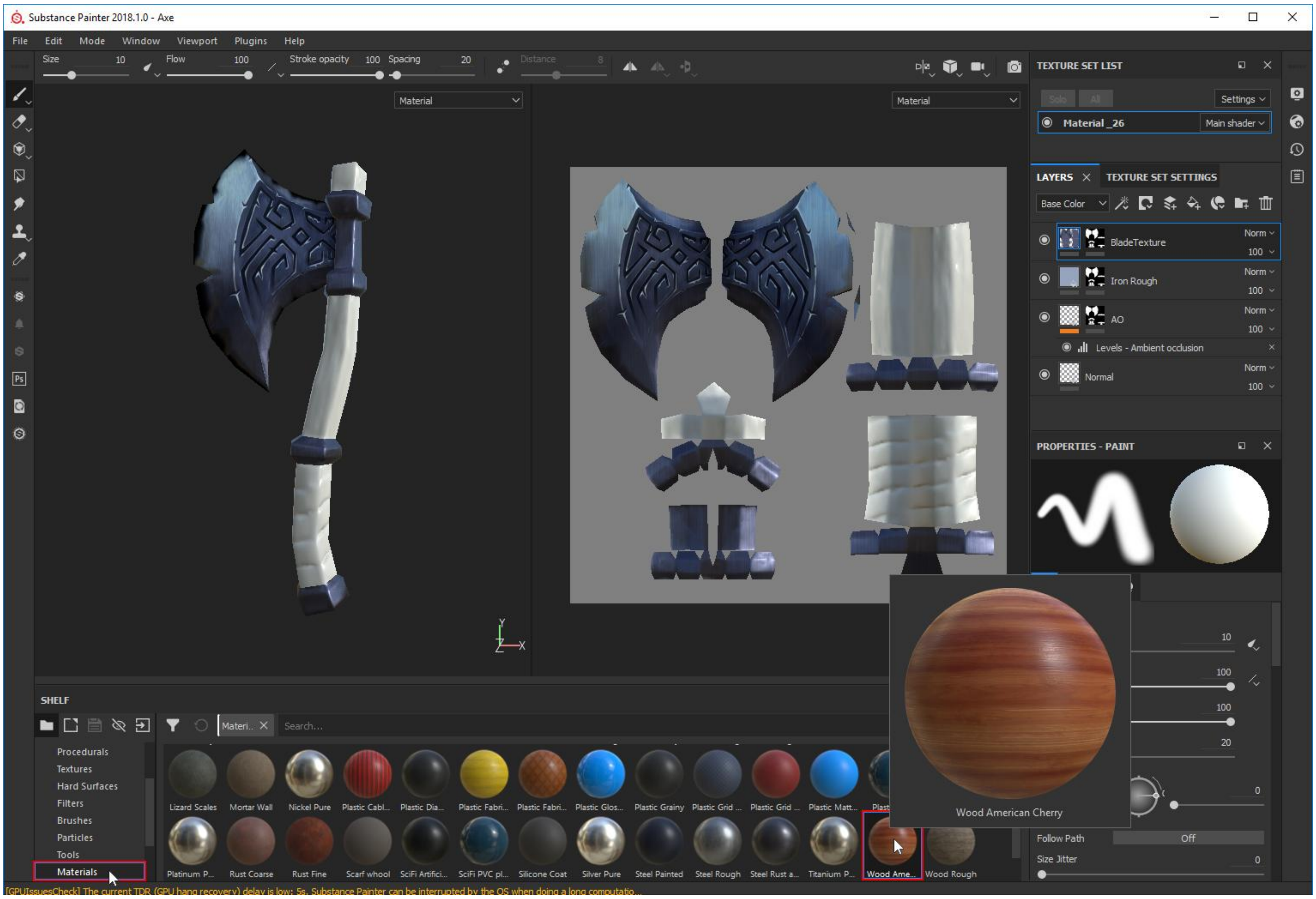
之后按 Polygon Fill，框选金属的部分



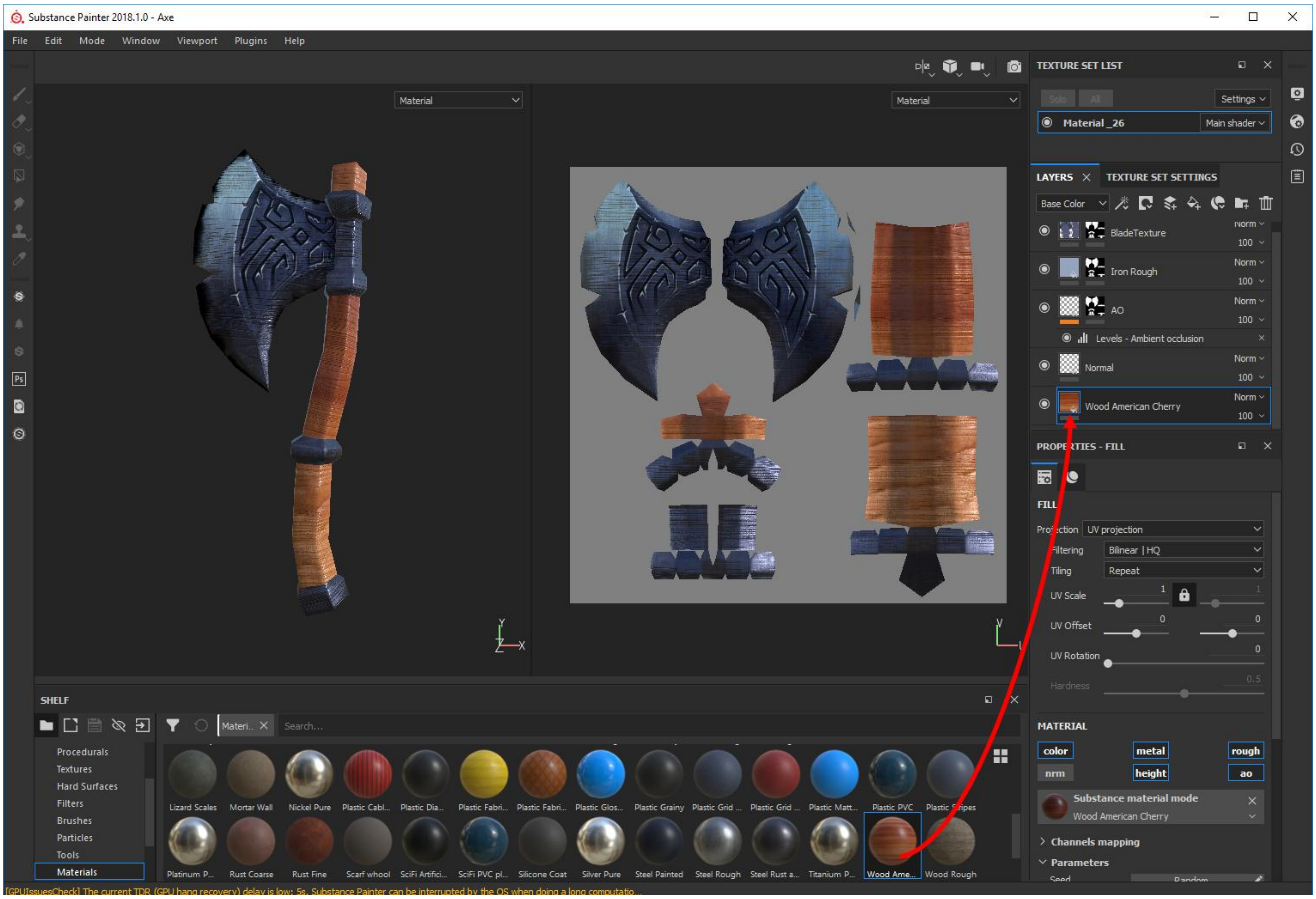
完成了



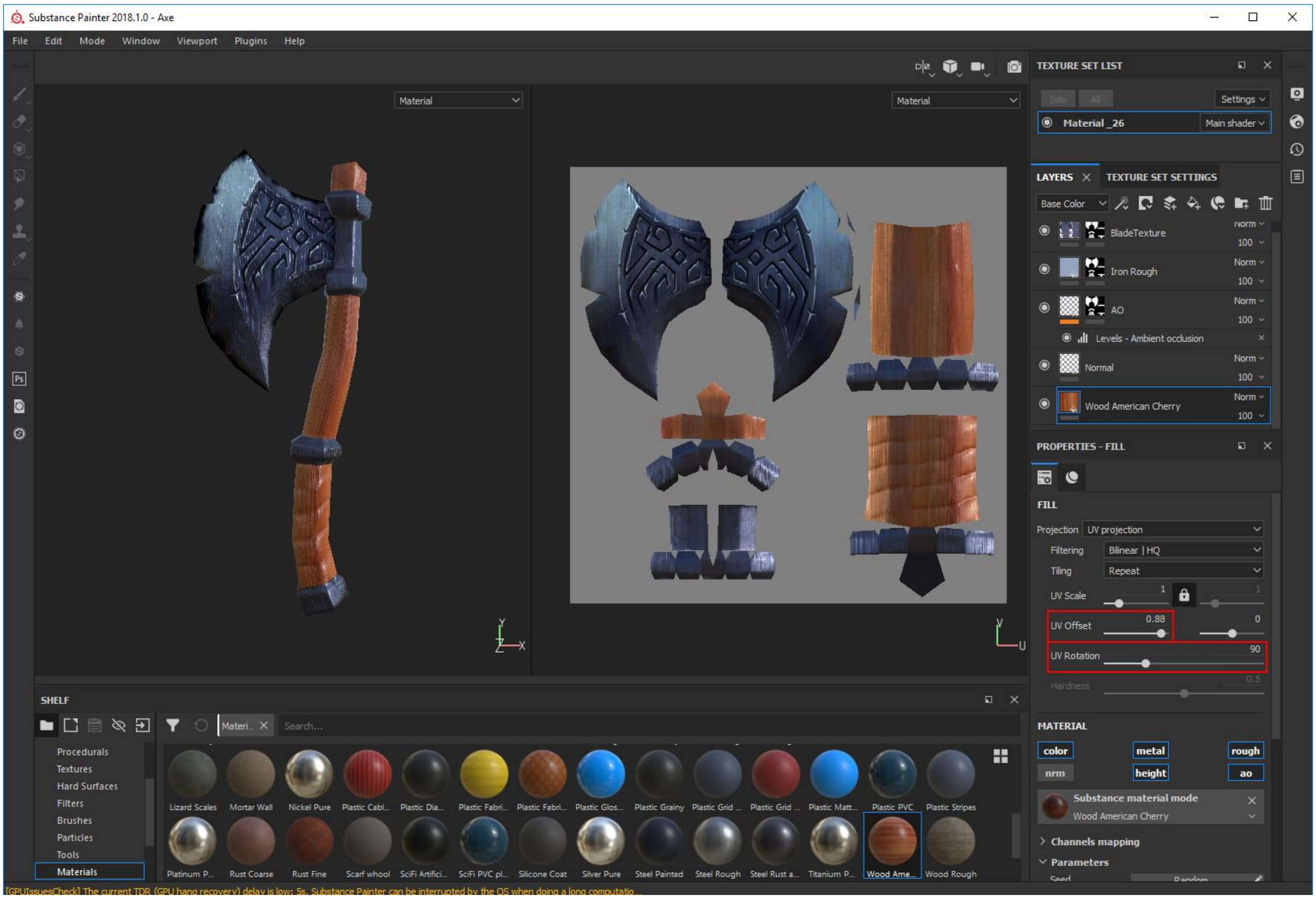
轮到木材的部分 Materials → Wood American Cherry



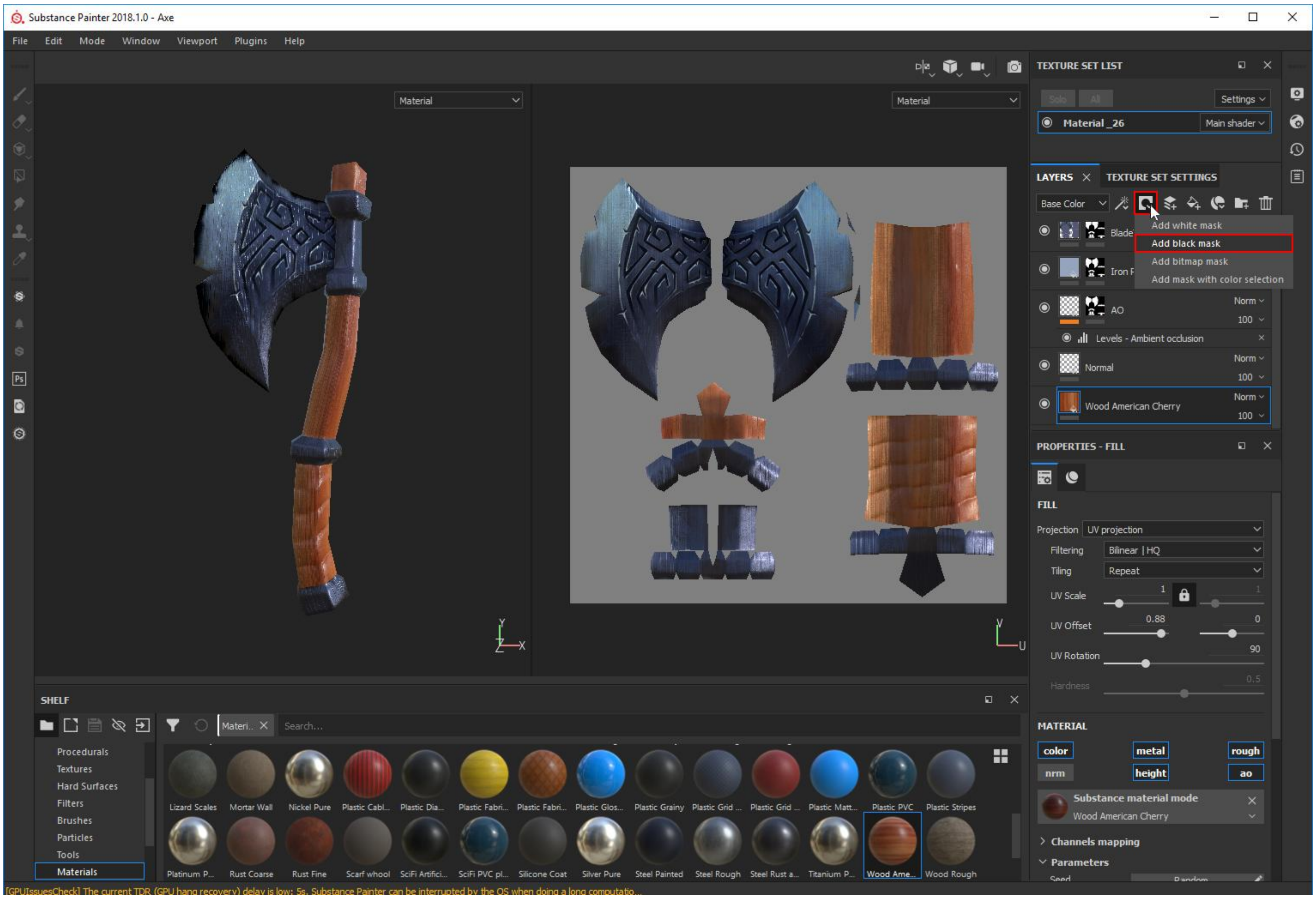
把 Wood American Cherry 拉到 layers



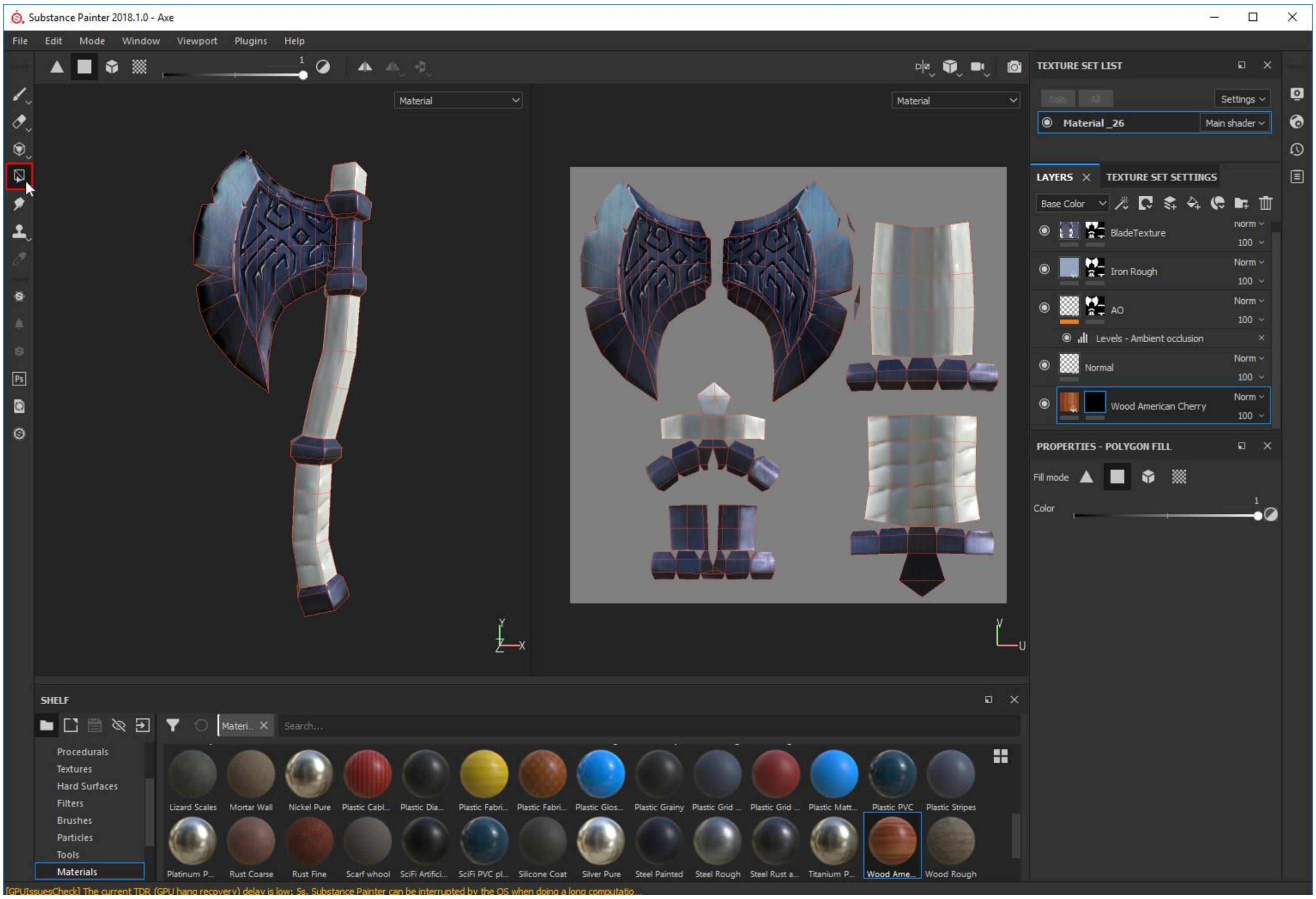
调整 UV Offset 和 UV Rotation (要看你的斧头 uv)



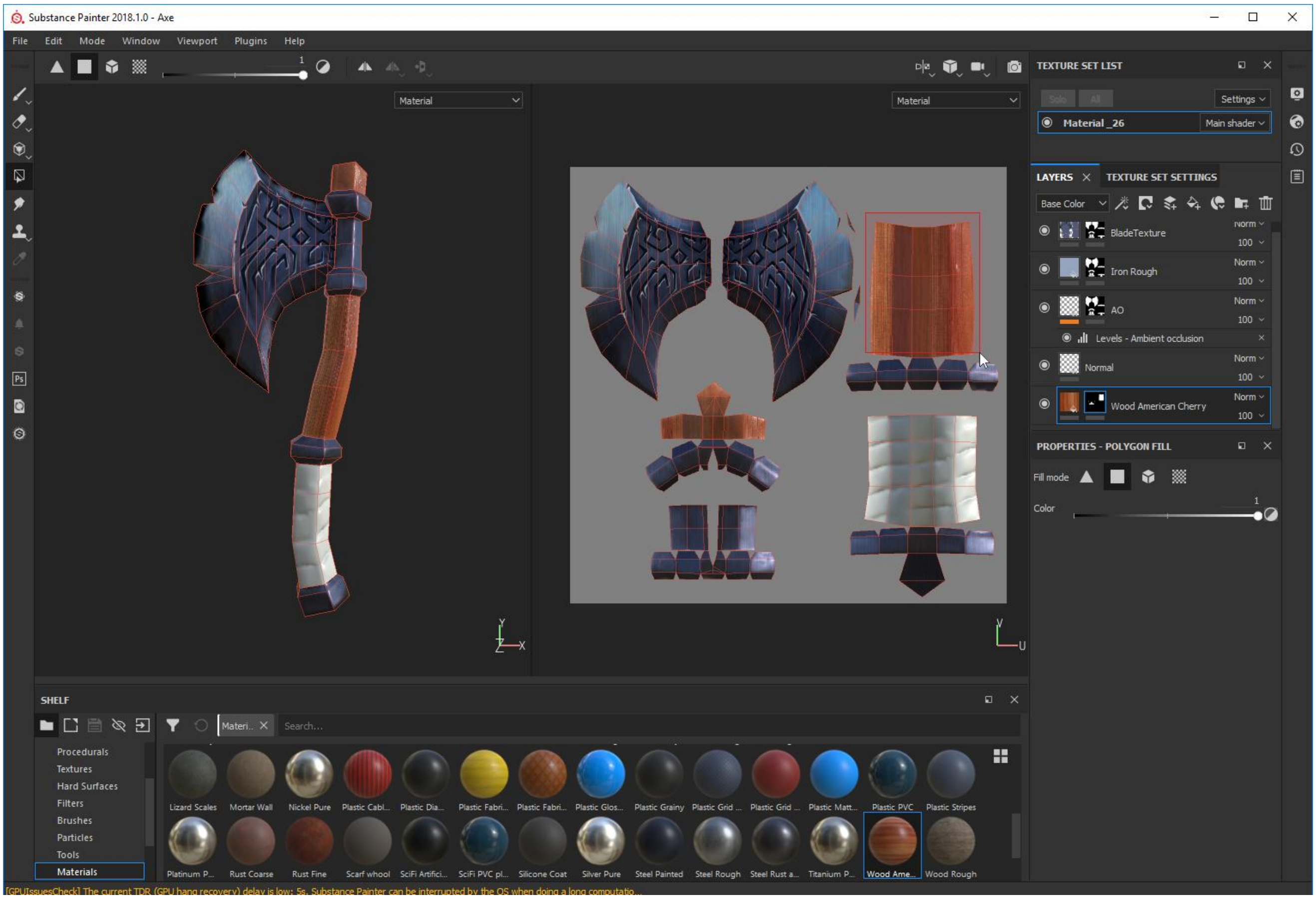
在 Wood American Cherry，添加 Add black mask



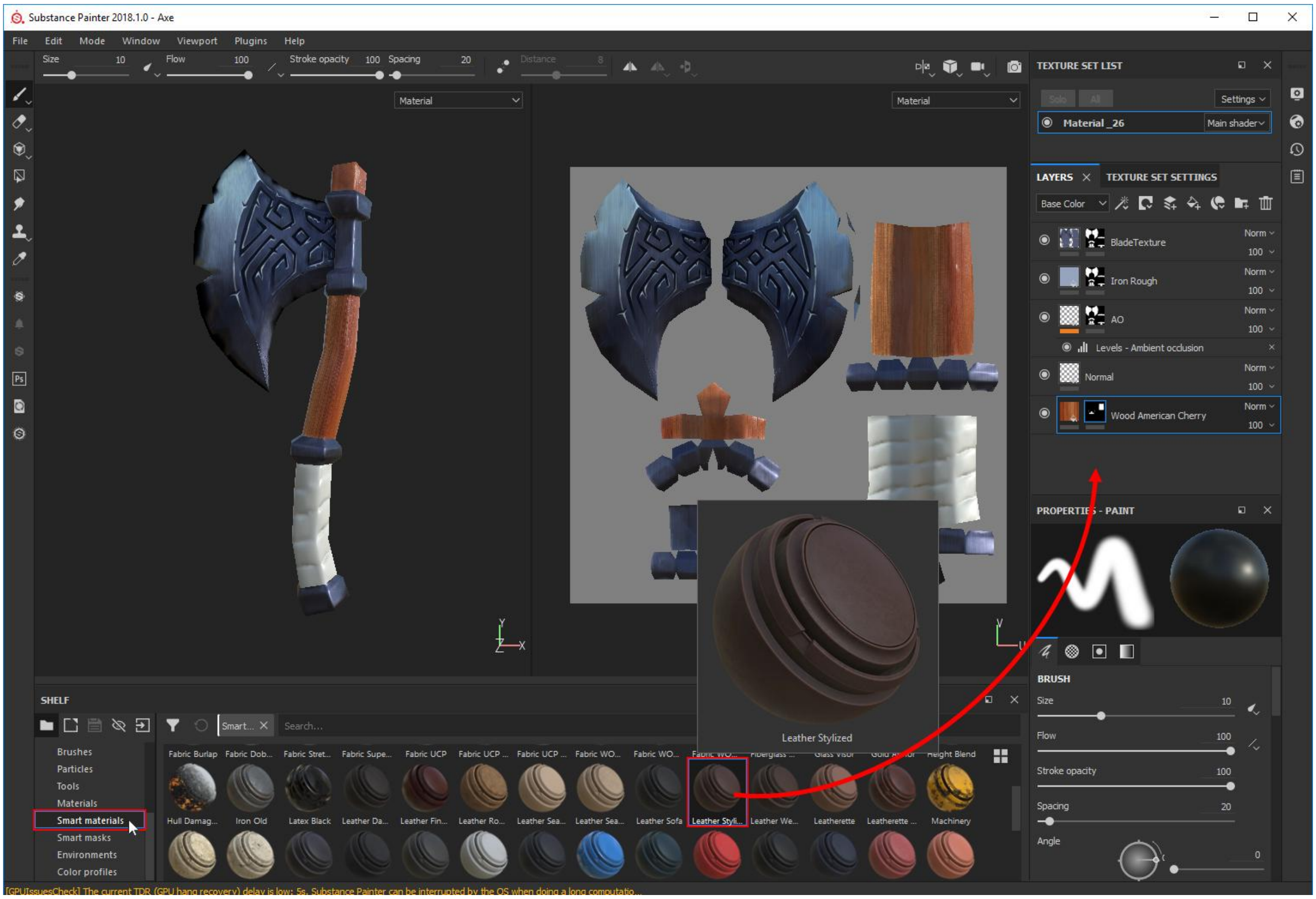
然后按 Polygon Fill，框选木材 uv 的部分



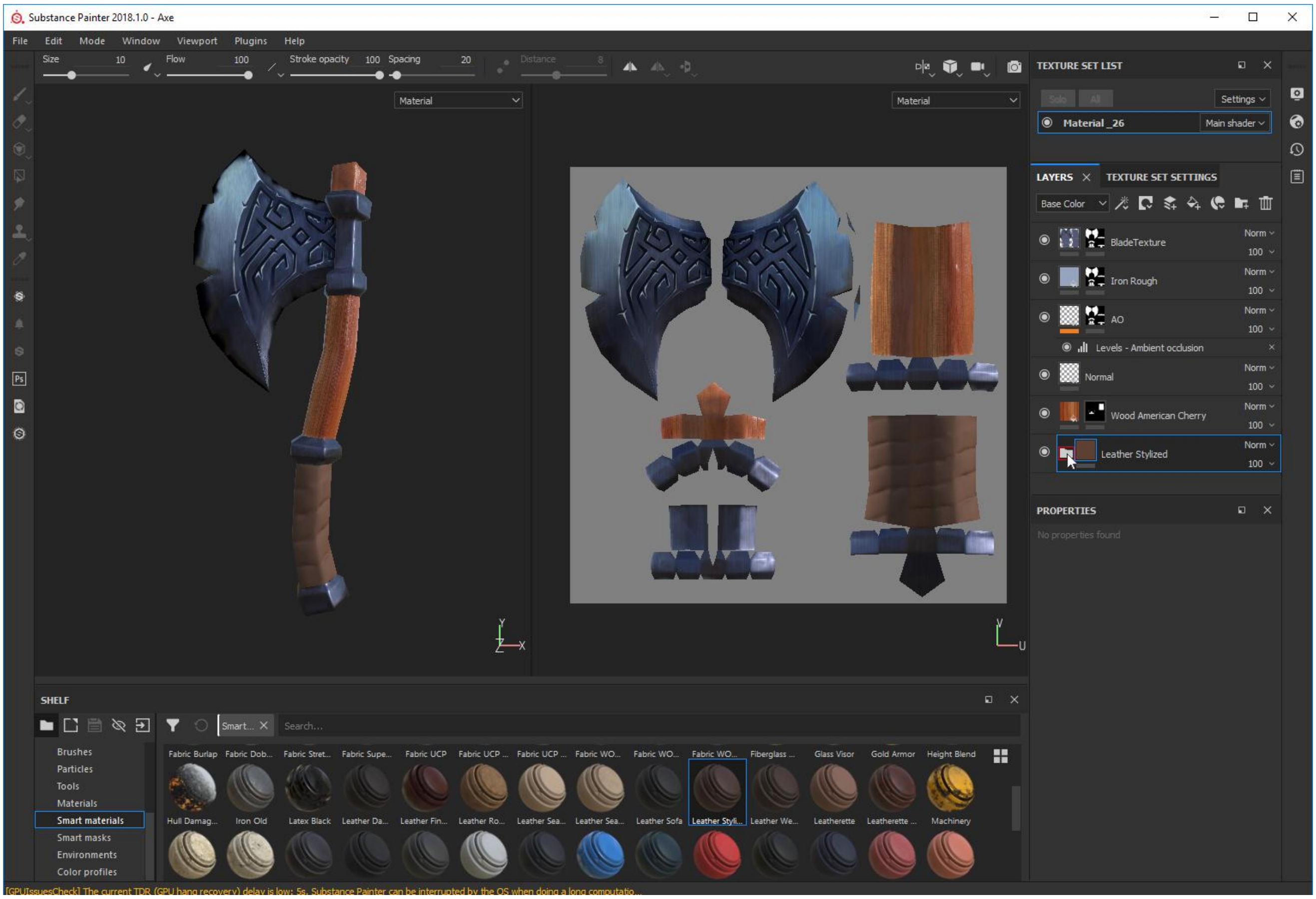
框选了木材的 uv 部分，接下来轮到握把的部分



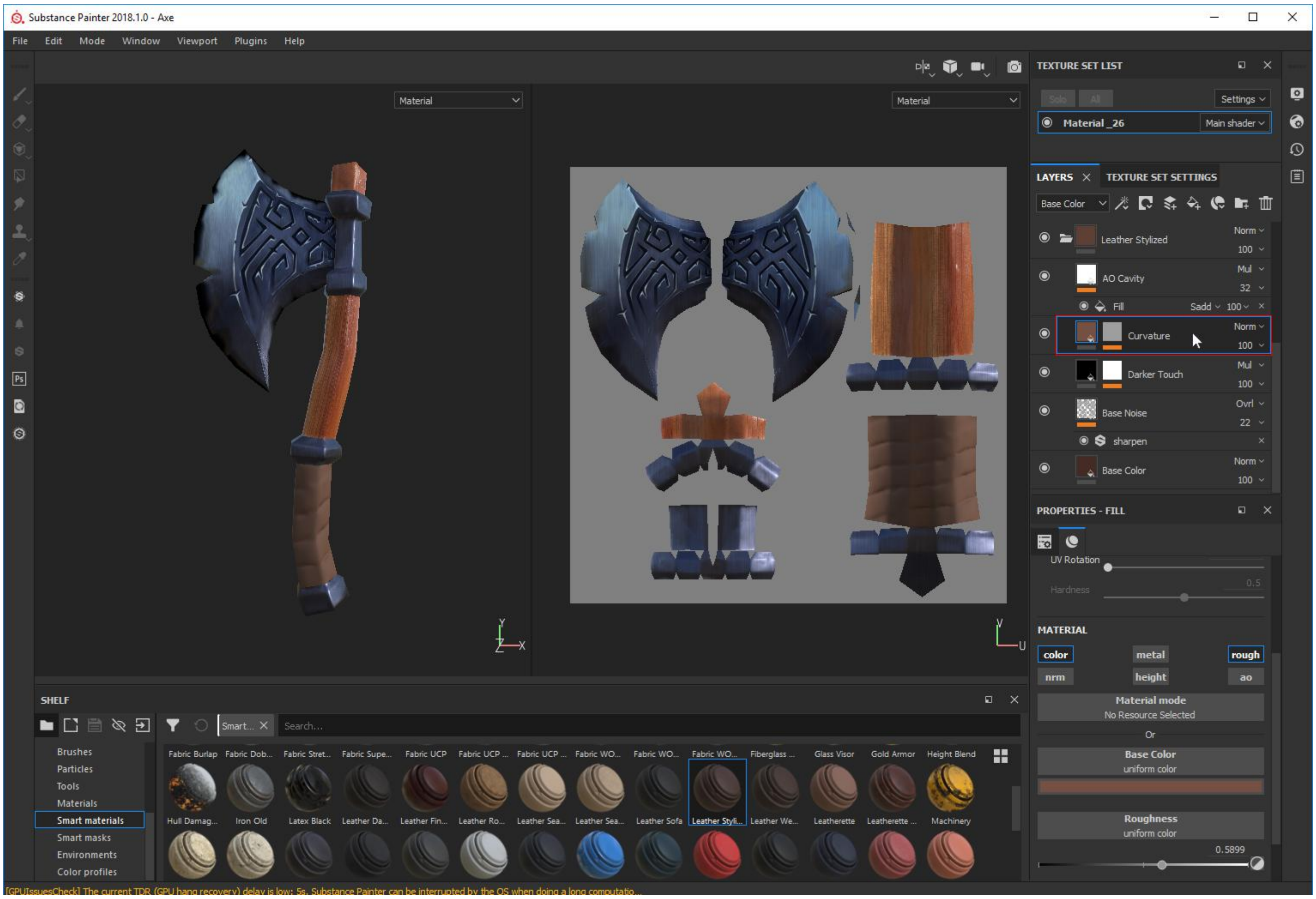
在 Smart materials → Leather Stylized 拉到 layers 里面



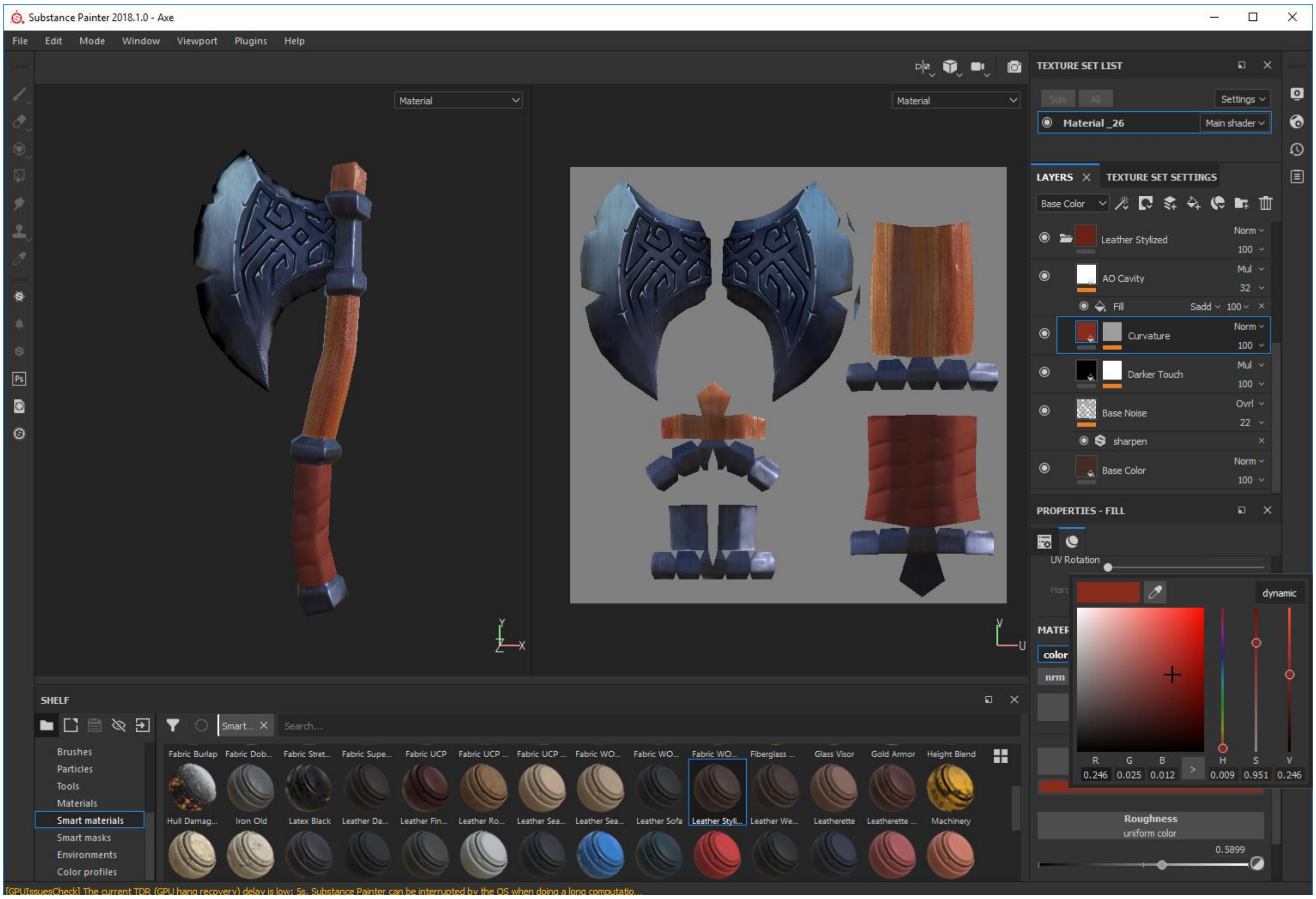
按下文件夹符号打开 leather stylized 所有的每一层



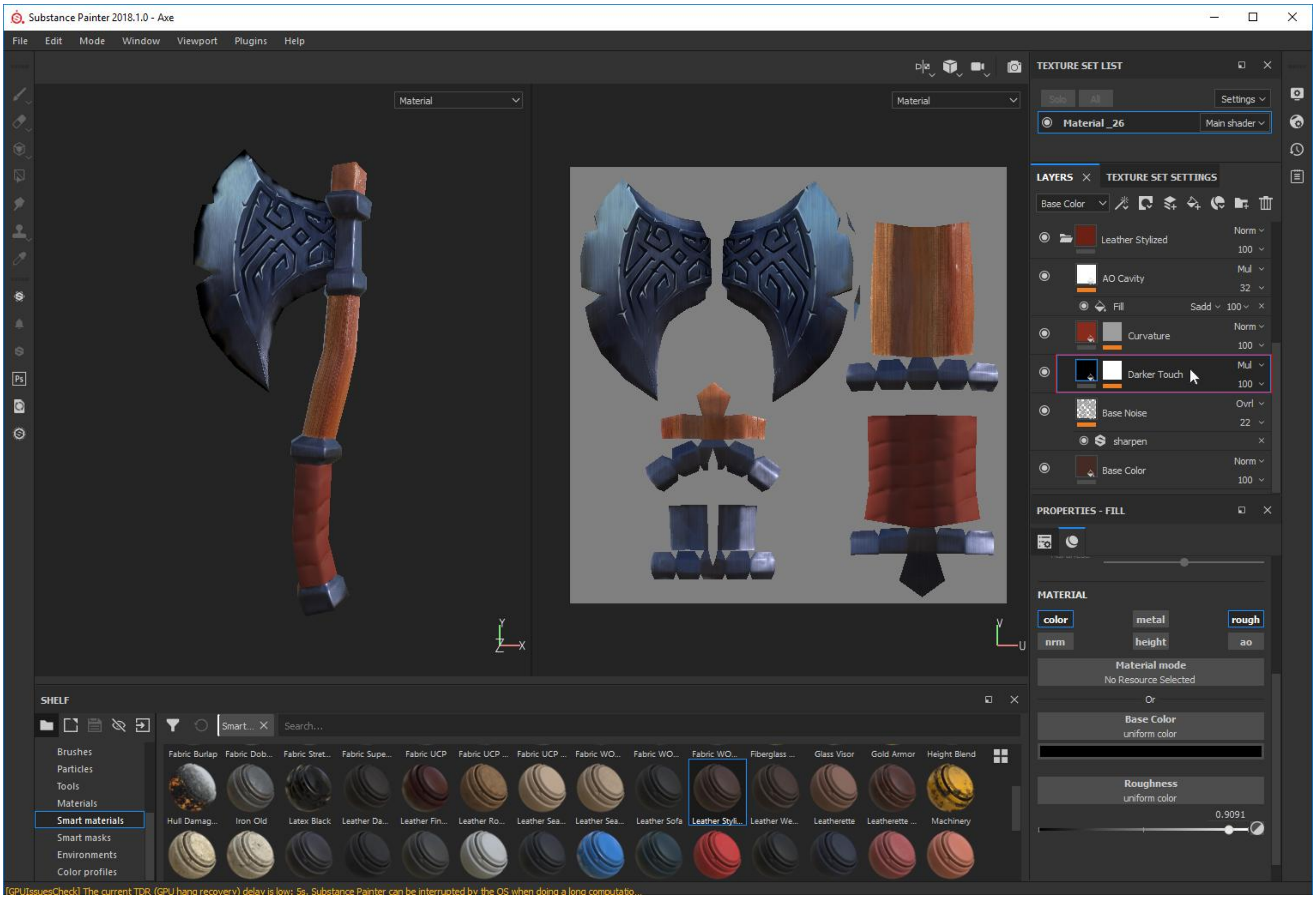
选 Curvature，然后我们要修改 base color 的颜色



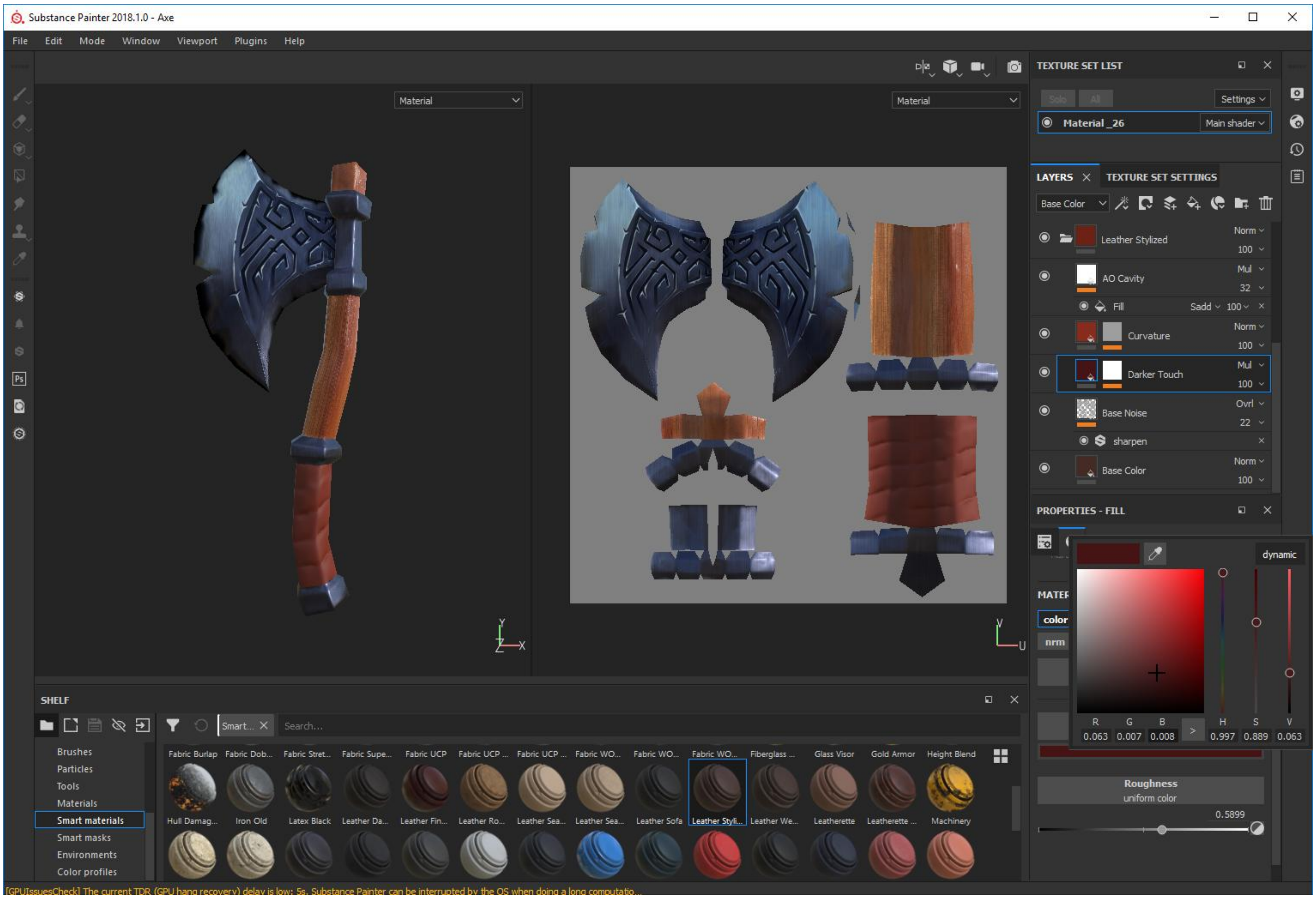
把 base color 调成一些红色



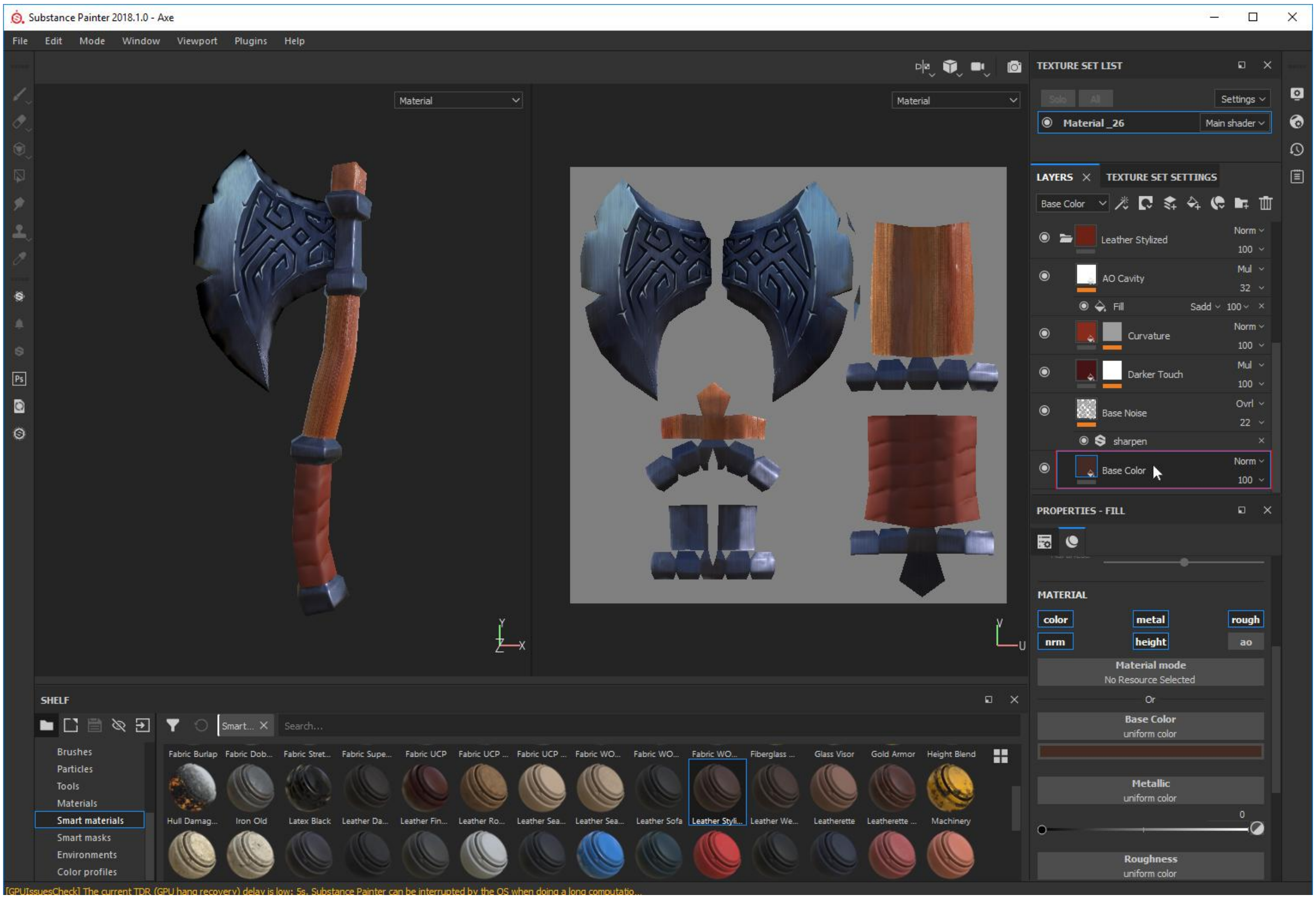
选 Darker Touch



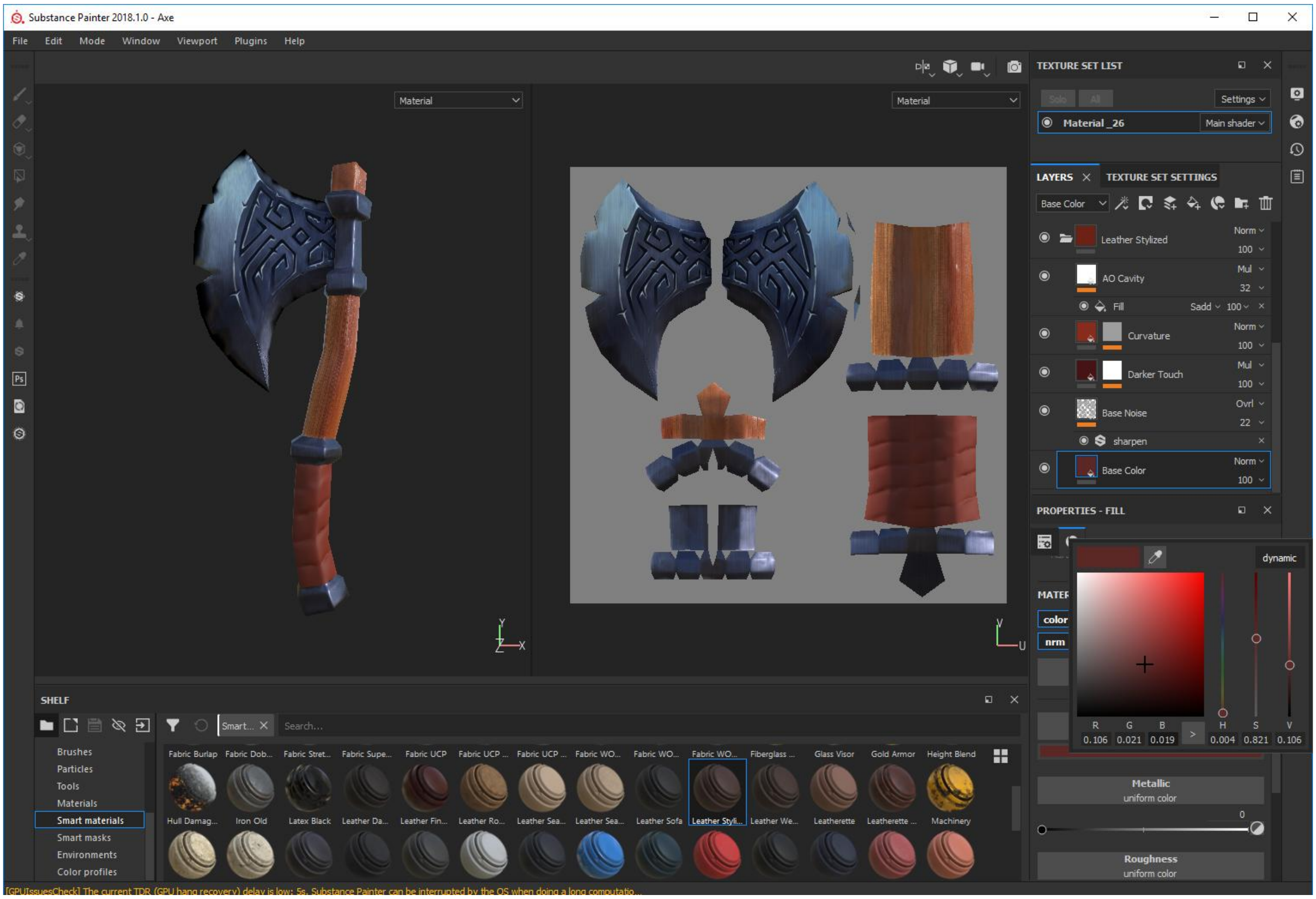
把 base color 的黑色改成深褐色



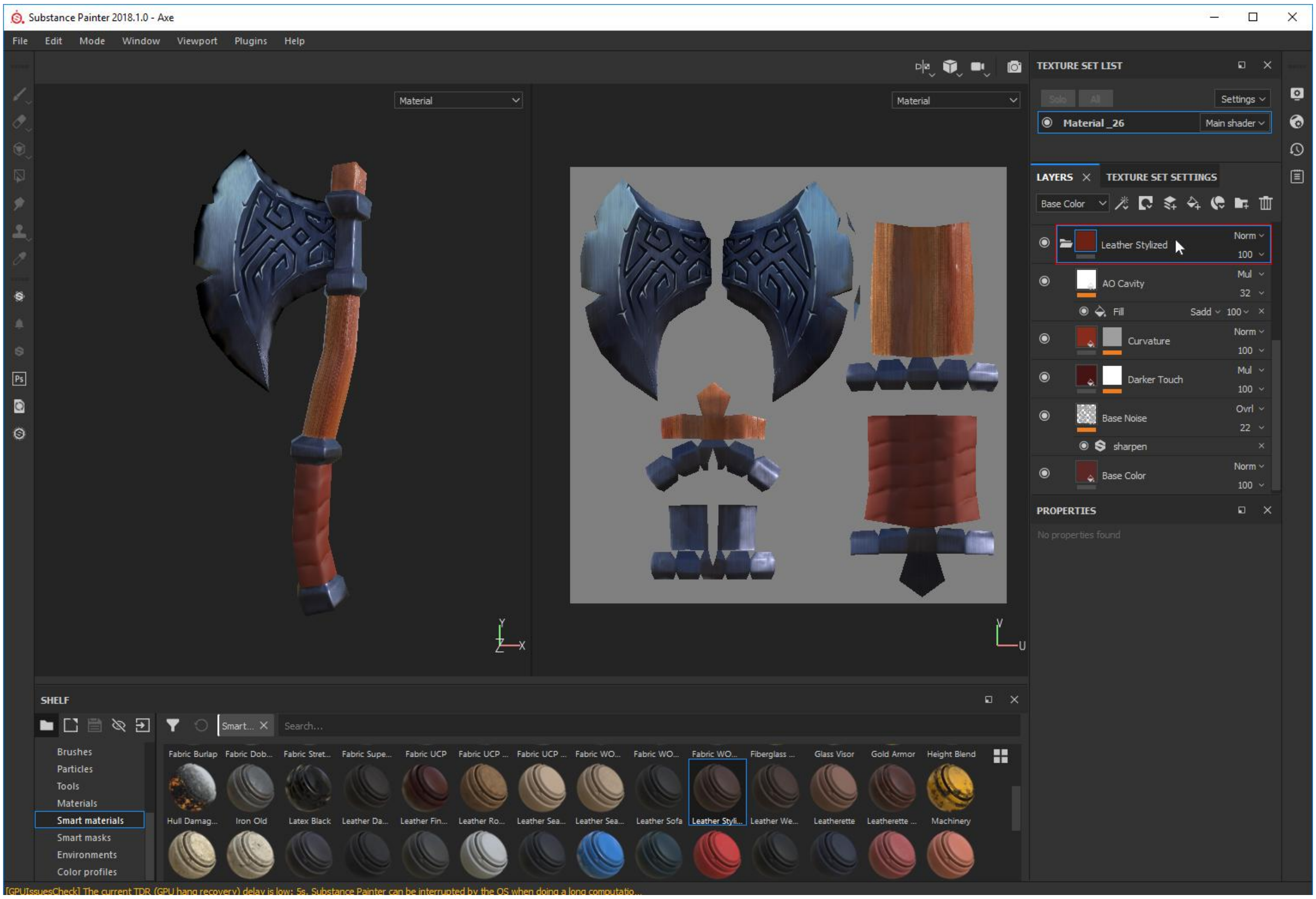
最后，选 Base Color 这一层



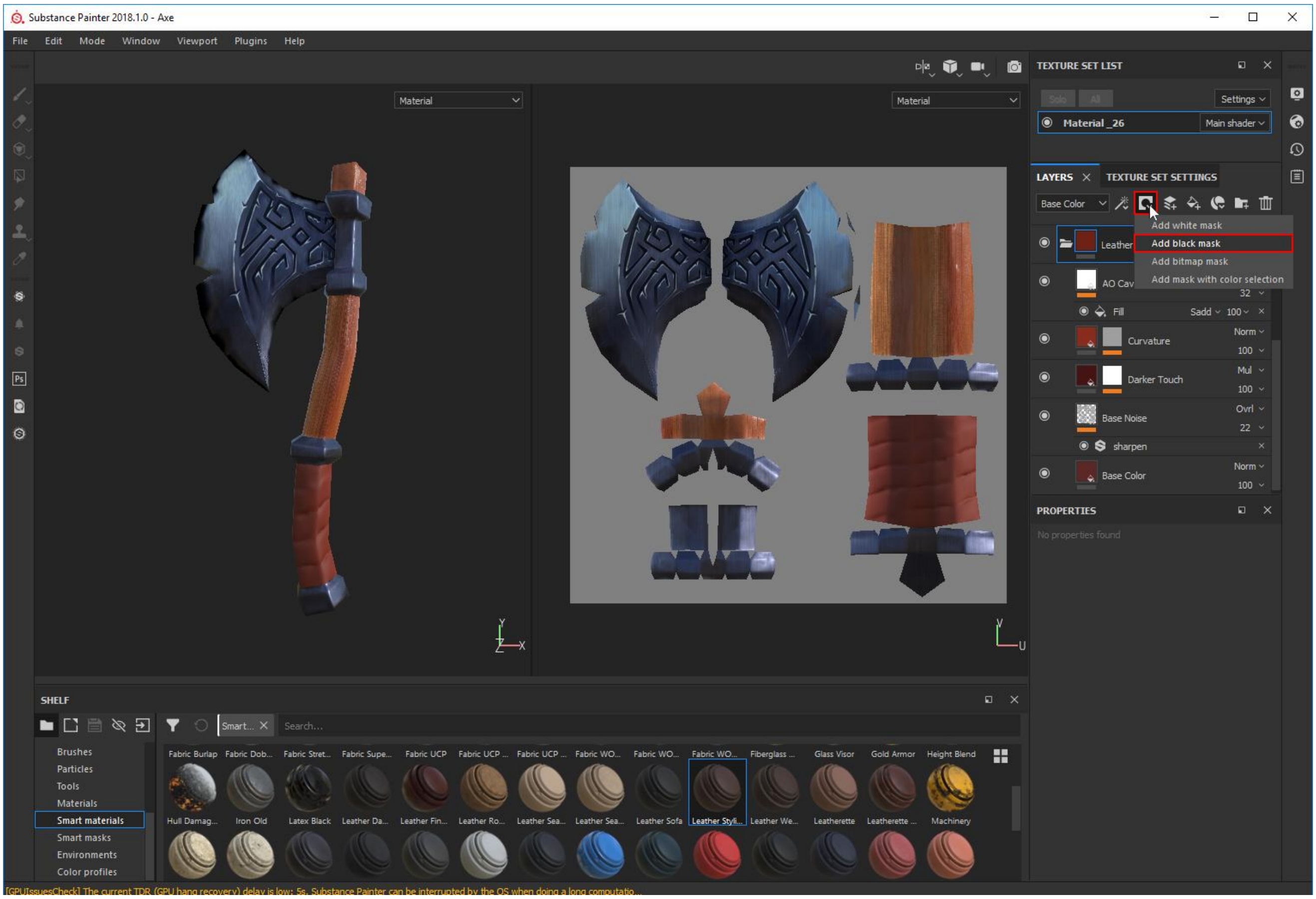
修改颜色，让它带一点红色



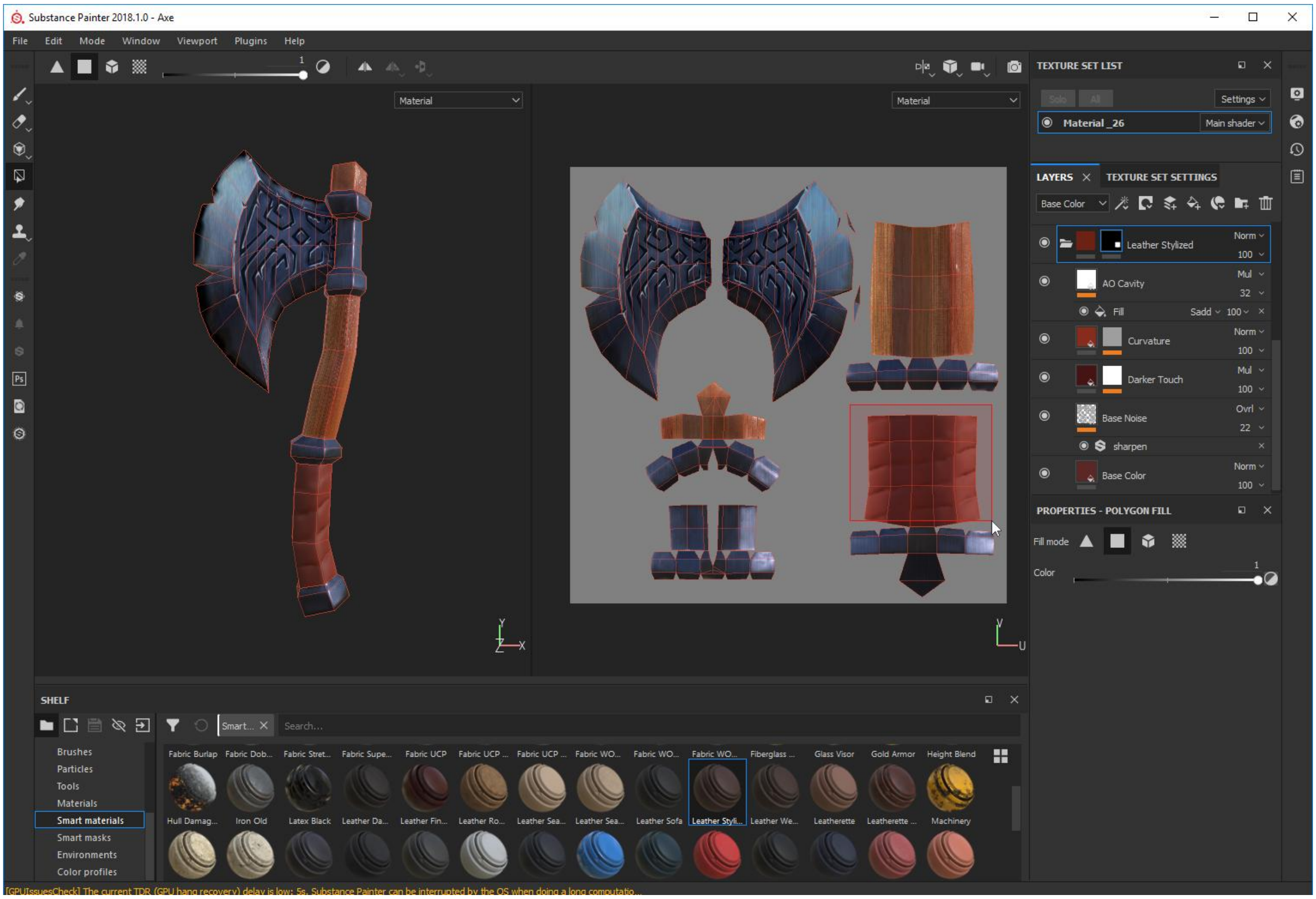
弄完之后，按 Leather Stylized，我们需要添加 black mask



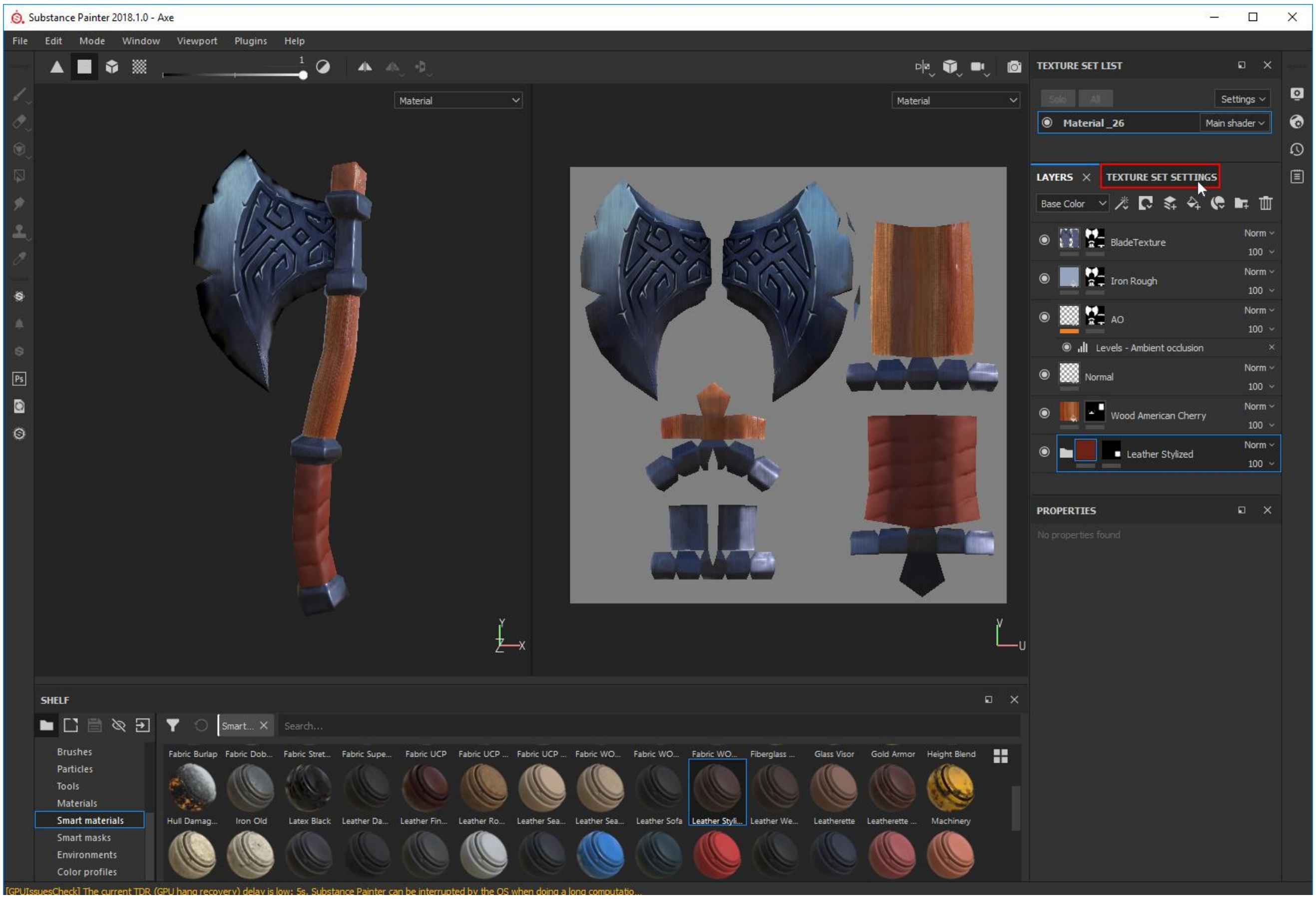
按下 Add black mask



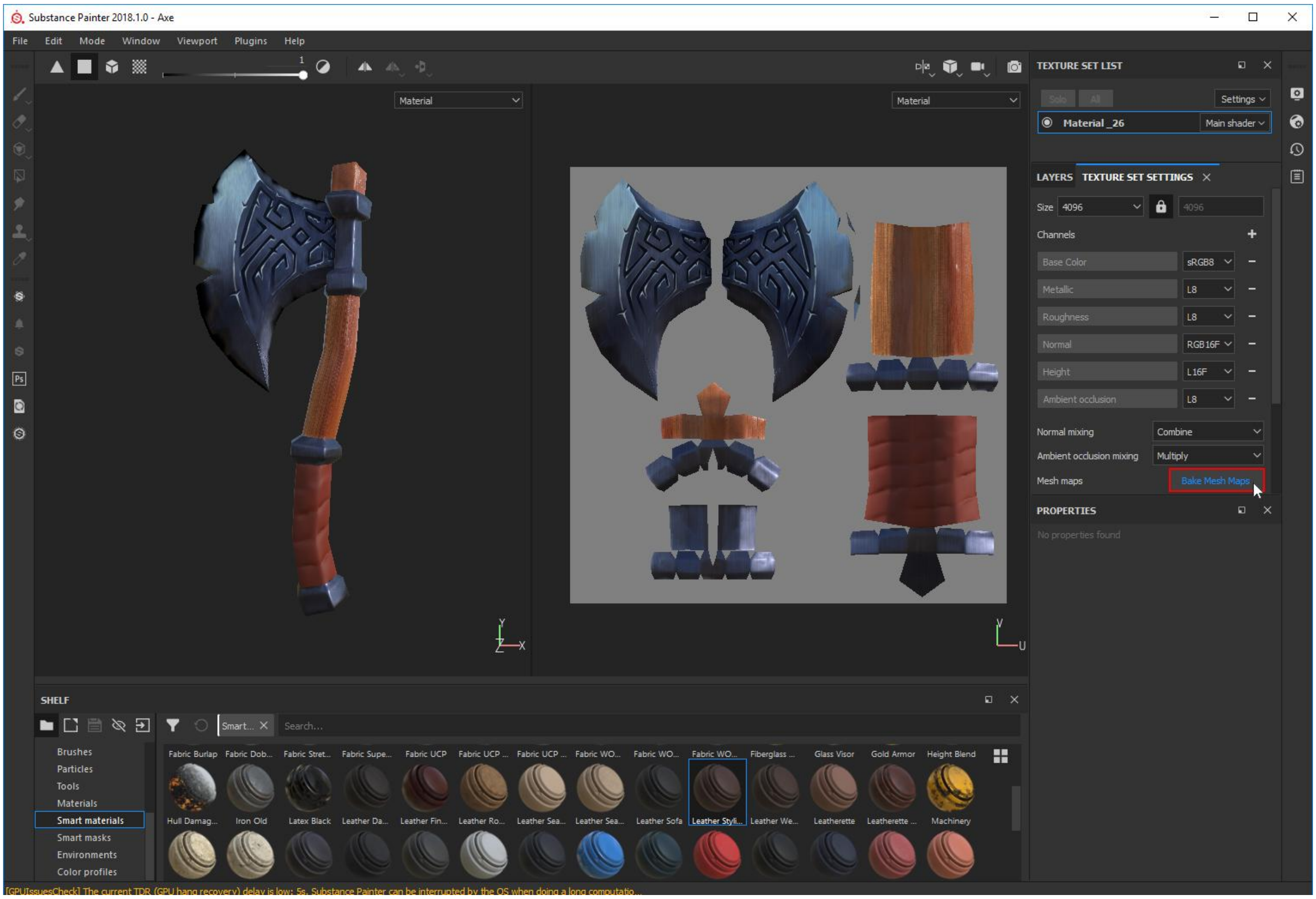
之后用 Polygon Fill 来框选握把的 uv 部分



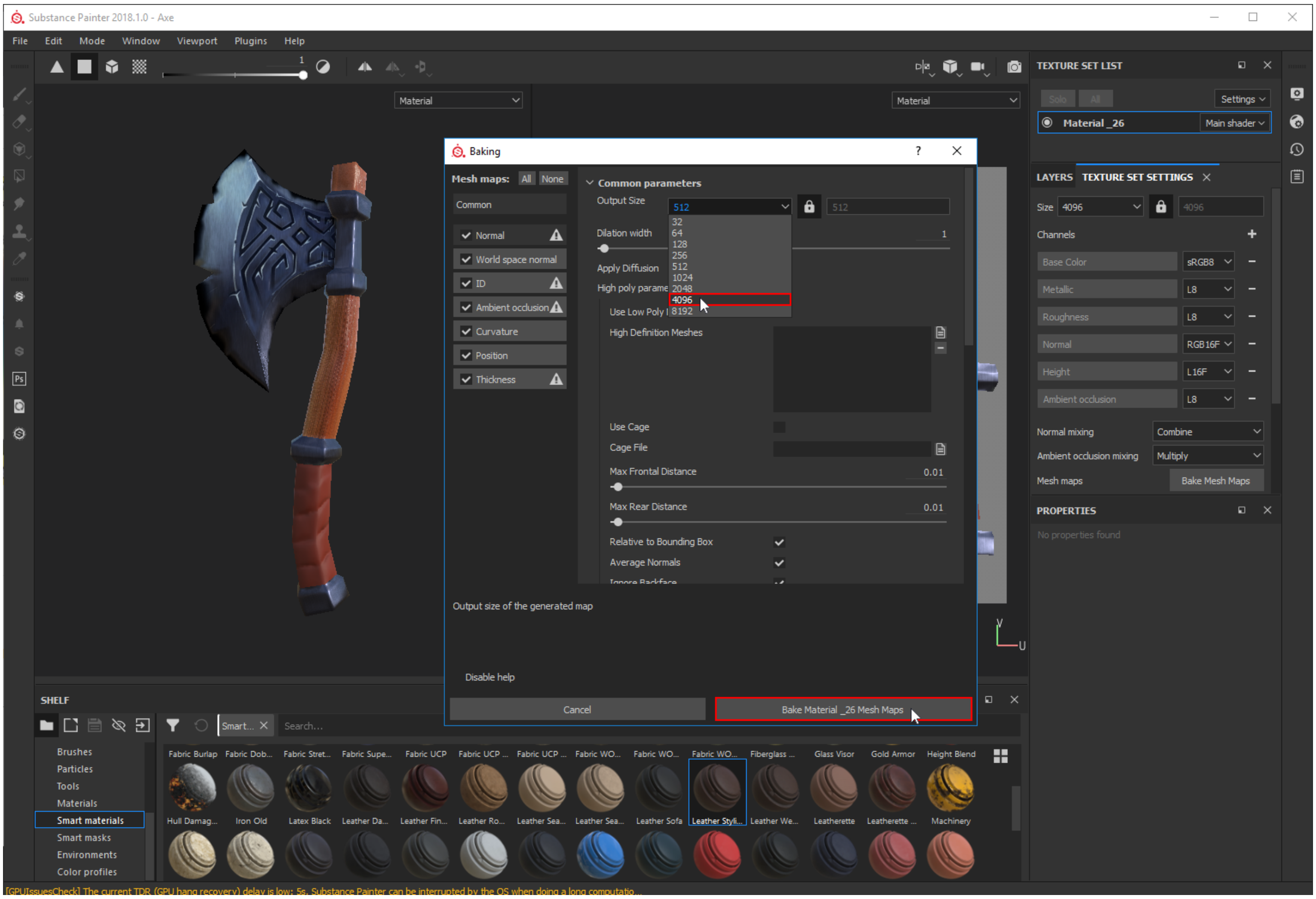
做完了，我们接下来按 Texture Set Settings



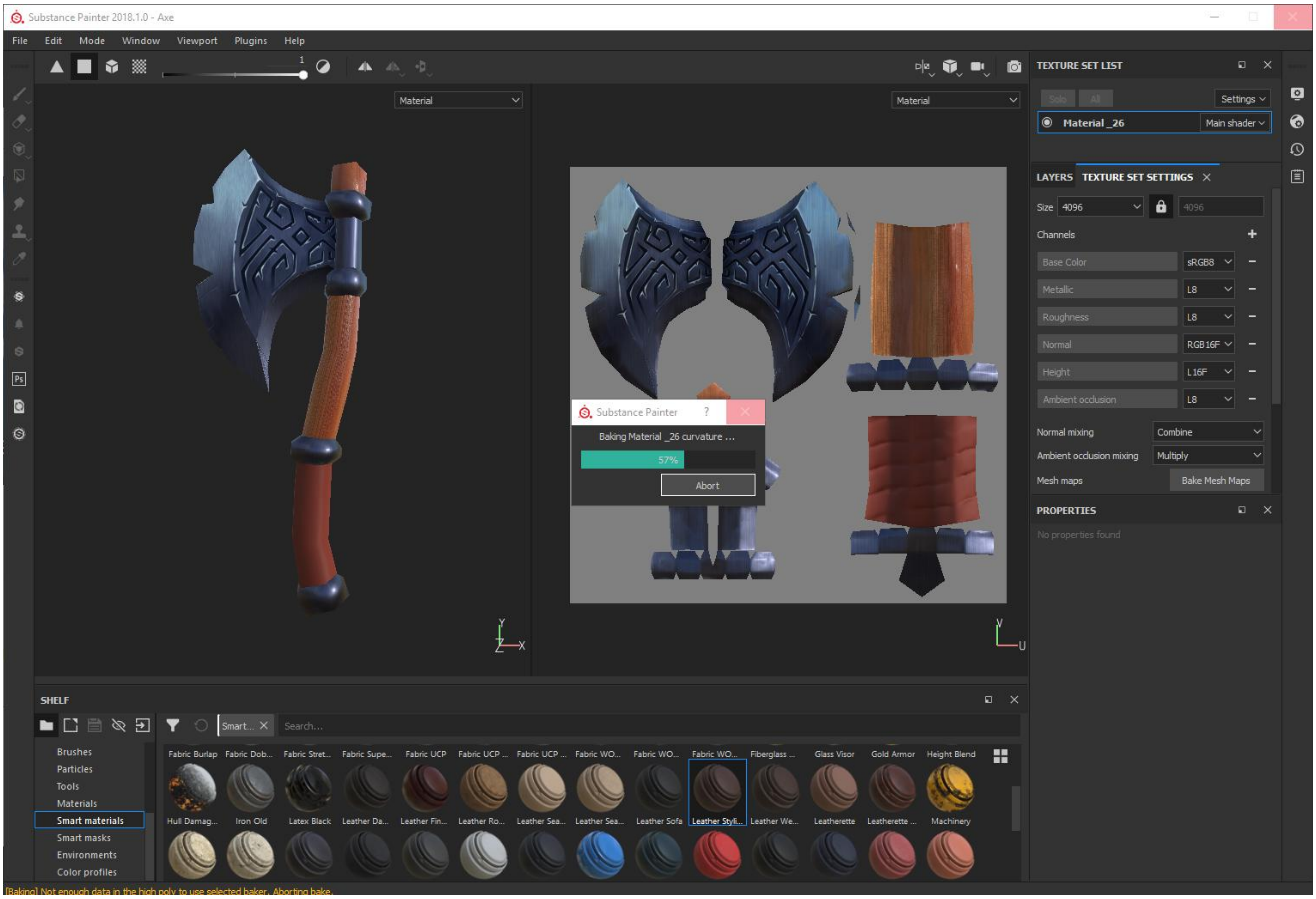
按下 Bake Mesh Maps



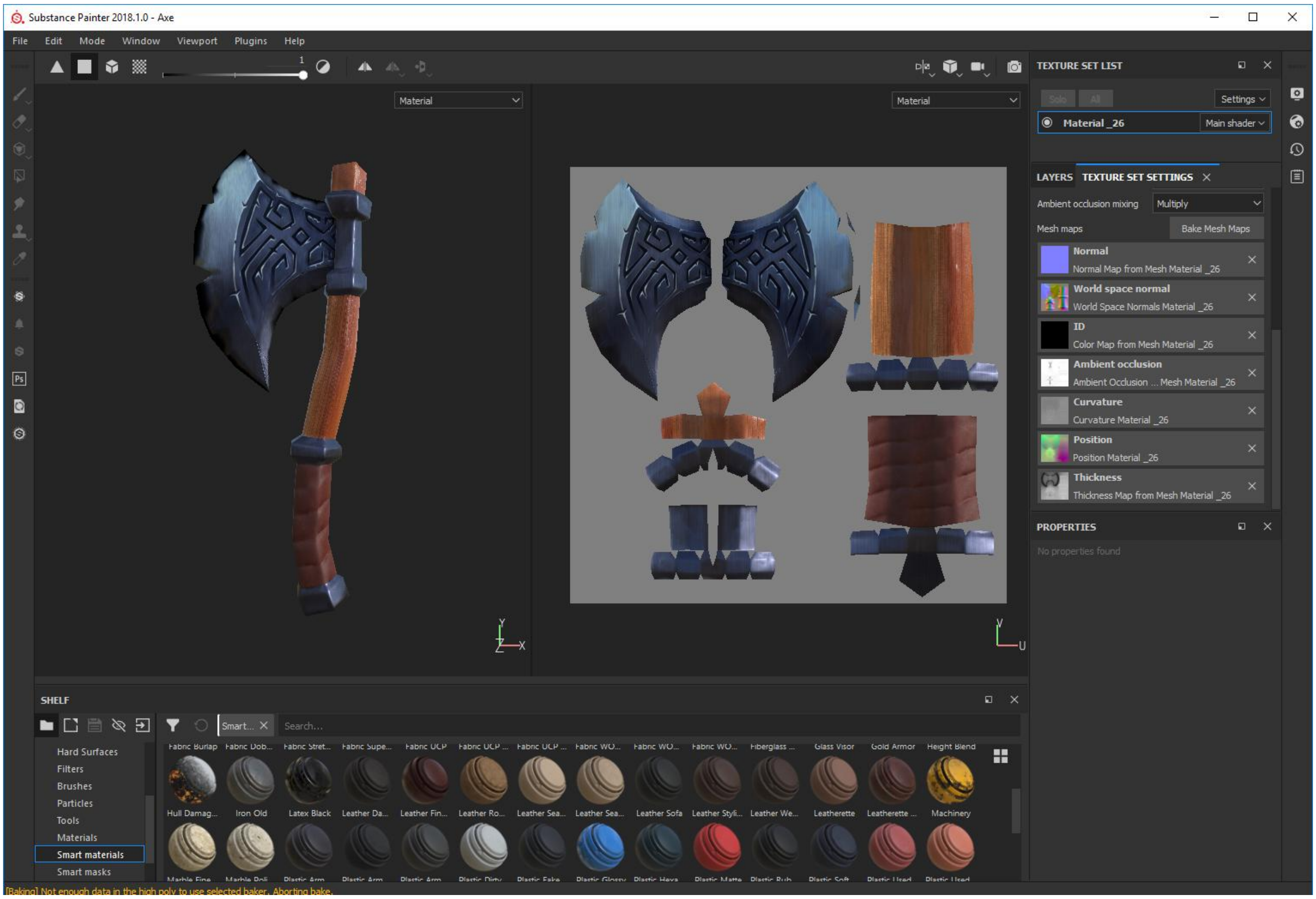
选择 output size，然后按下 bake

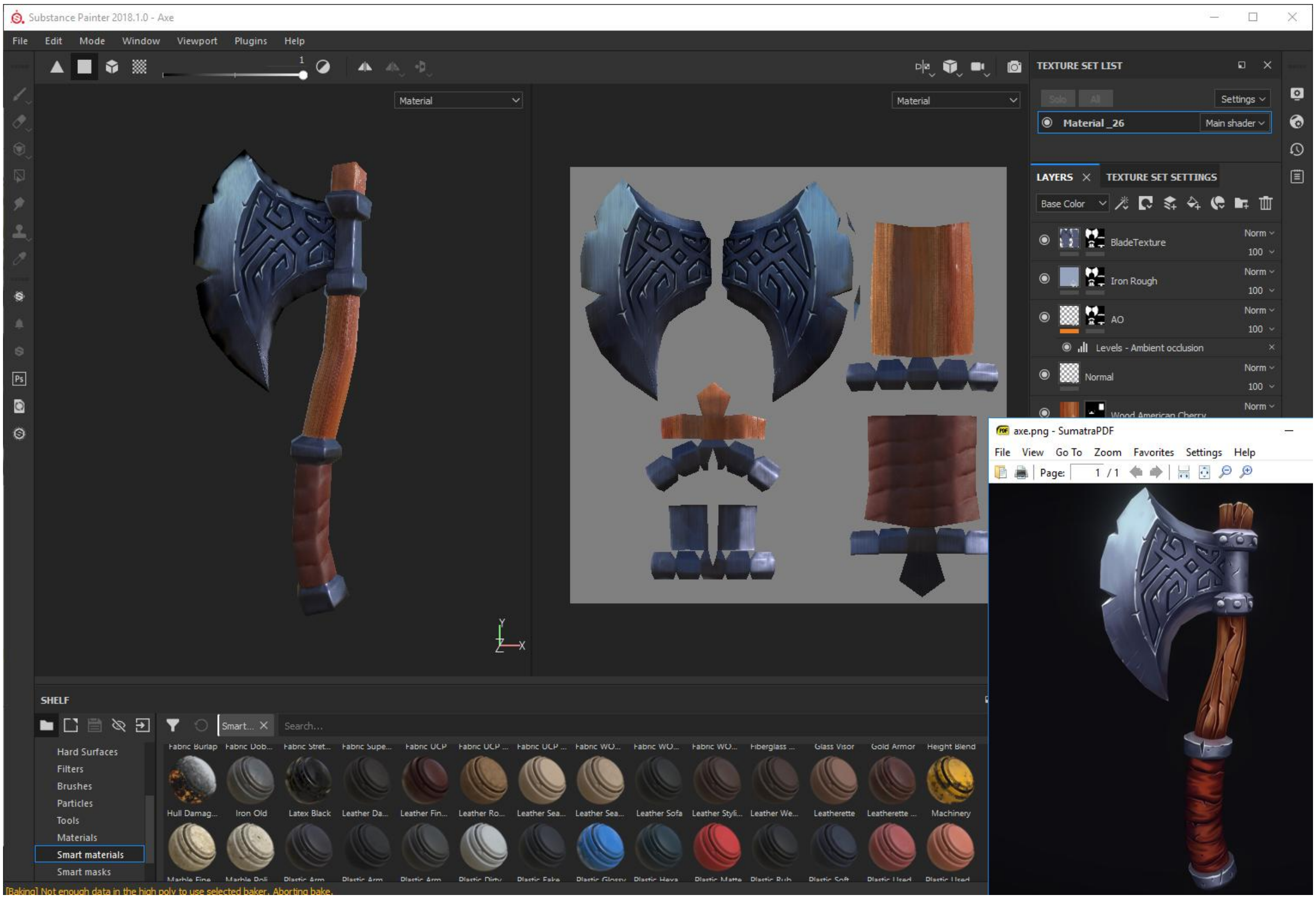


Baking...



完成了


Substance Painter 2018.1.0 - Axe
File Edit Mode Window Viewport Plugins Help
Material
Material
TEXTURE SET LIST
Settings
Material _26
Main shader
LAYERS
TEXTURE SET SETTINGS
Ambient occlusion mixing
Multiply
Mesh maps
Bake Mesh Maps
Normal
Normal Map from Mesh Material _26
World space normal
World Space Normals Material _26
ID
Color Map from Mesh Material _26
Ambient occlusion
Ambient Occlusion ... Mesh Material _26
Curvature
Curvature Material _26
Position
Position Material _26
Thickness
Thickness Map from Mesh Material _26
PROPERTIES
No properties found
SHELF
Smart...
Search...
Hard Surfaces
Filters
Brushes
Particles
Tools
Materials
Smart materials
Smart masks
Hull Damag...
Iron Old
Latex Black
Leather Da...
Leather Fin...
Leather Ro...
Leather Sea...
Leather Sea...
Leather Sofa
Leather Styli...
Leather We...
Leatherette
Leatherette ...
Machinery
[Baking] Not enough data in the high poly to use selected baker. Aborting bake.


Substance Painter 2018.1.0 - Axe
File Edit Mode Window Viewport Plugins Help
Material
Material
TEXTURE SET LIST
Settings
Material _26
Main shader
LAYERS
TEXTURE SET SETTINGS
Base Color
BladeTexture
Iron Rough
AO
Levels - Ambient occlusion
Normal
Wood American Cherry
axe.png - SumatraPDF
File View Go To Zoom Favorites Settings Help
Page: 1 / 1
SHELF
Smart...
Search...
Hard Surfaces
Filters
Brushes
Particles
Tools
Materials
Smart materials
Smart masks
Hull Damag...
Iron Old
Latex Black
Leather Da...
Leather Fin...
Leather Ro...
Leather Sea...
Leather Sea...
Leather Sofa
Leather Styli...
Leather We...
Leatherette
Leatherette ...
Machinery
[Baking] Not enough data in the high poly to use selected baker. Aborting bake.